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"Scire est nescire, nisi id me
Scire alius sciret."

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SOME PROBLEMS IN SURGICAL TREATMENT OF ABDOMINAL CONDITIONS.

BY

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AT the present day there exist many interesting problems concerning the surgical treatment of abdominal conditions. The correct method of operation for chronic ulcers of the stomach, the treatment of intestinal stasis, of perforation of gastric and duodenal ulcers, of peritonitis, and the vexed question of peritoneal drainage are all matters which might lead to interesting discussion. The present remarks are concerned only with those cases of chronic disorders of the digestive apparatus which come to the surgeon on account of the failure to give relief of prolonged medical treatment and dieting. Such cases may conveniently be grouped together under the term "Chronic Abdomen."

For years past many of the best brains of our profession have been working at the symptomatology of the various conditions which may be included under the above term, and the value of such work as that of Moynihan and of Hurst on duodenal and gastric ulcers, gall-bladder conditions and appendix dyspepsia cannot be over-estimated.

The classical chain of symptoms associated in our minds with duodenal ulcer—the occurrence of pain at a definite interval of two to three hours after food, the relief of pain by a meal, the regular recurrence of pain in the small hours of the morning, and so on—leads to a correct diagnosis in the larger proportion of cases.

Nevertheless, in spite of all the brilliant work of these and many other observers, it all too frequently happens that the diagnosis made after most careful questioning of the patient and most thorough physical examination is proved to be wrong at the subsequent operation, which may reveal a condition of affairs almost entirely unsuspected.

To quote a few cases illustrating this uncertainty :—

1. An elderly man, thin and emaciated, was admitted to hospital having for two years complained of epigastric pain, constantly present, always worse immediately after food, and of frequent and copious vomiting. X-ray examination showed a rather dilated, decidedly hypotonic stomach, not completely emptied ten hours after the opaque meal. At the operation there was found a large active ulcer of the first part of the duodenum and a gall-bladder full of stones. There was no organic obstruction of the pylorus. Infolding of the ulcer, gastro-enterostomy and removal of the gall-bladder gave him complete relief.

In this case an adherent appendix obviously the seat of old disease was left alone owing to the patient's condition at the operation.

2. A middle-aged woman was admitted to hospital having complained for ten months of pain coming on two hours after her meals and waking her up at one o'clock in the morning. The pain was relieved by food. Shortly

before admission to hospital she had vomited some blood, and had definite melæna which lasted for a fortnight. X-ray examination showed marked hypertonicity of the stomach. At the operation no ulcer was found either in the duodenum or stomach. There was no redness of the pylorus or enlargement of glands along the greater curvature. The appendix showed no definite signs of disease, the gall-bladder was normal, but the cæcum and the ascending colon were provided in their whole length with a long mesentery, which enabled them to be completely lifted from the wound and laid on the towels on the left side of the abdomen. Fixation of the proximal colon entirely relieved her symptoms. The appendix, though not obviously diseased, was removed in case the colopexy should involve it in adhesions or cause it to be kinked.

3. A man in excellent health, who had been lying in bed for the previous month on account of a broken leg following a hunting accident, was suddenly seized with symptoms indicative of a perforated duodenal ulcer. With the exception of slight indigestion for two days previous to this catastrophe he had had no symptoms pointing to digestive disorder. At the operation a large ulcer in the first part of the duodenum was found, which had perforated ten hours previously.

In the first case, then, a chronic duodenal ulcer was present when the symptoms pointed to some entirely different condition.

In the second case no ulcer was present, though the symptoms were such as might lead one to look with confidence for such a lesion.

In the third case a large ulcer was present which must in all probability have been in existence for a considerable time without producing symptoms of any kind whatever.

Such variations from the typical clinical history of Moynihan and the typical radiological appearances of Hurst must be quite common in the experience of every operating surgeon, and their frequency leads to the inquiry whether after all an accurate symptomatology for any one organ of

the several which appear to be so intimately related together can be expected to exist as a universal rule. It is interesting in this connection to compare the frequency and confidence with which gastric ulcer was formerly diagnosed in the past with the most recent view founded on the unrivalled experience of Sir Berkeley Moynihan, who now holds that gastric ulcer cannot be diagnosed by clinical signs or symptoms at all, and indeed that the only way to be sure of the presence of this condition is to see the ulcer, either at the operation or on an X-ray plate. It has long been recognised that there exists a correlation of symptoms between the stomach, the duodenum, the gall-bladder and the appendix, and that in a given condition the fault may be in one or all of these structures. So much indeed has the interchangeability of the subjective symptoms of disease of these organs become a matter of faith with surgeons, that it has often been the custom on finding the first three normal at the operation to proceed to remove a more or less normal appendix in the pious hope that this may give the patient relief. The undoubted existence of the real and well-marked condition known as appendix dyspepsia, and first described and elaborated by Moynihan, can hardly be regarded as justifying such a procedure. As pointed out by Moynihan, true appendix dyspepsia is associated with pyloric spasm, with injection of vessels at the pyloric end of the stomach, and with enlargement of the glands at the pyloric end of the greater curvature.

Yet another factor exists to which attention was first called by Wilms in 1904 and recently by Waugh, by Tyrrell Gray and by Morley, *i.e.* abnormal mobility of the cæcum and ascending colon due to the presence of a persistent mesentery. Waugh argued that an ascending colon provided with a mesentery must work at a mechanical disadvantage as compared with the same structure relatively fixed to

the posterior abdominal wall, and that as the result of the long-continued strain thus produced over-distension of the cæcum and sagging downwards of the latter and of the ascending colon are brought about.

On a purely mechanical theory Waugh believes that conditions such as ulceration of the duodenum, gall-stones, dropping of the right kidney, etc., are primarily caused by the dragging of a mobile and overloaded proximal colon. Tyrrell Gray has further elaborated the possible results of this condition, but has shown that far more important than the mere mechanical drag on the structures to which the proximal colon is attached by its peritoneal investment is the influence produced upon them reflexly by stimulation of the splanchnic nerves situated in the mesentery.

What, then, is the nature of the relationship which exists between these different organs—the stomach, duodenum, gall-bladder, appendix, ascending colon and cæcum—a relationship the practical importance of which appears to be that changes occurring in one or more members may cause symptoms referable to others of the group ?

The connection may be :—

(*a*) *Mechanical*, as by bands or adhesions which directly interfere with function, or, as indicated above, by the drag of a heavily-laden and sagging bowel on the other organs to which it is attached by its peritoneal investment.

(*b*) *Toxic.*—The gall-bladder and the appendix are notoriously liable to become the harbourers of virulent organisms, and the same is true of the sagging and distended proximal colon of intestinal stasis. It may well be believed that an organ so delicately susceptible as the duodenum to physiological chemical stimuli should also be readily affected by bacterial toxins.

(*c*) *Nervous or Reflex.*—The physiological investigations of Cannon and of Elliott on the mechanism of intestinal movements throw interesting light on the problems of abdominal disease.

Elliott has shown that stimulation of the splanchnic nerve causes inhibition or relaxation of the whole small intestine with the exception of the two sphincters—the pylorus and the ileo-cæcal valve—which are thrown into a condition of tonic spasm.

The splanchnic nerves are situated in the mesentery, and Tyrrell Gray suggests that distant reflex effects well known to occur in cases of inflammation or adhesions of such an organ as the appendix can only be produced when the mesentery is involved in the morbid process.

It is, of course, impossible to draw a hard-and-fast line between the mechanical, toxic, and reflex influences which one organ may exert on another. For instance, the mechanical drag of adhesions may lead to stasis in the appendix, colon, or gall-bladder, as the case may be, and thus initiate a toxic process, which itself may act directly on the muscle fibres or secretory glands or indirectly through the splanchnic nervous system. Or the inhibitory stimuli generated in the mesentery of an inflamed appendix may in the first place, by producing pyloric spasm, prevent the escape of acid gastric juice into the duodenum and thus throw out of gear the whole of the elaborate apparatus engaged in regulating the flow of pancreative juice and bile; and in the second place, by producing relaxation of the cæcum and colon, they may cause a sagging and loaded bowel to drag heavily on the peritoneal covering of the duodenum, and thus aggravate the mischief already initiated.

This experiment of Elliott's I have seen on two occasions perfectly reproduced by disease in the human body. Both instances were cases giving typical signs and symptoms of

acute intestinal obstruction, such as might be produced by strangulation of the small intestine by a band; both had profuse stercoraceous vomiting. At the operation the whole small intestine was found to be distended with the exception of the ileo-cæcal valve and the lower inch or two of the ileum, which were in a condition of acute enterospasm. No mechanical obstruction could be found, and the cause of the enterospasm in each case was an acutely inflamed appendix, the removal of which promptly relieved all symptoms.

A third case of intestinal obstruction from adhesions in the neighbourhood of the ileo-cæcal valve showed relaxation of the lower two feet of the ileum with intense contraction of the whole small intestine above, thus suggesting that splanchnic stimuli need not always produce the typical effects of Elliott's experiment, but that variations of spasm and inhibition may occur in different sections. The very important bearing of intestinal spasm and relaxation on the treatment of acute peritoneal conditions, on the causation of gastric ulcers, and on the rationale of gastro-enterostomy is convincingly set forth by Tyrrell Gray.

Another fact elucidated by physiologists which, while it perhaps does not bear directly on the present question, yet appears to me of great surgical importance, is that the normal movement of the proximal colon is not that of propulsive peristalsis but antiperistalsis. The contents of this part of this bowel are being constantly and repeatedly driven against the ileo-cæcal valve, thereby producing a central reflux current in the transverse and descending colon. In fact, a similar effect is produced in the proximal colon to that which obtains in the stomach when peristaltic waves drive its contents against the closed pylorus. In face of this physiological fact, it is easy to understand the futility of ileo-sigmoidostomy for chronic constipation,

and possibly some light is also thrown on the relatively excellent results obtained after hemicolectomy as compared with the disastrous effects so frequently seen after Lane's operation of complete excision of the colon.

It has been suggested that mobility of the proximal colon can be easily determined by comparison of radiograms taken with the patient lying down during full expiration and standing up during full inspiration. My own experience leads me to believe that unless an extreme degree of mobility, say five inches, is shown by the X-ray examination, the method is of little value.

It is certain that a colon with no mesentery may glide freely on its areolar attachment to the posterior abdominal wall, but if Tyrrell Gray's arguments be accepted, such mobility is in itself of little importance. In order that the far-reaching neuro-muscular effects above described may be produced, it is necessary that the splanchnic nerves in the mesentery should be dragged on or otherwise stimulated. It is impossible to be certain of the existence of a persistent mesentery except by actual vision and examination when the abdomen is opened.

The theory that duodenal and gastric ulcers are invariably caused by the dragging of an ascending colon with persistent mesentery cannot be maintained. I have operated on two cases of definite duodenal ulcer in which no mesentery was present for this part of the bowel. That this condition, on the other hand, may sometimes be concerned in the causation of duodenal ulcer is to some extent supported by the fact that I have twice treated large, well-defined duodenal ulcers entirely by fixation of the colon, together with removal of the appendix, and both these cases have been relieved of their symptoms for over twelve months. The only saddleback ulcer of the lesser curvature on which I have operated by this method was not cured.

While, therefore, it may be conceded that persistent mesentery in the ascending colon may be one of the factors concerned in the etiology of duodenal and gastric ulcers, it certainly is not the only one, and Waugh's operation of colopexy should not take the place of well-tried measures such as gastro-enterostomy and partial gastrectomy. As an adjunct to gastro-enterostomy this operation appears likely to have a useful function.

My own experience of Waugh's operation for conditions depending on mobility of the right kidney is limited to two cases, both of which had large hydronephrosis from kinking of the ureter; in both cases the kidney was heavily infected by colon bacilli. Waugh's operation was performed on these patients and the kidney was not touched. Both have been completely relieved.

It appears probable, then, that this method of treatment may prove to be useful in cases of dragging pain associated with mobile right kidney, for which nephrorrhaphy has hitherto been considered the correct treatment, and that it may eventually replace the latter method, the results of which have been so frequently uncertain and unsatisfactory.

In that large class of chronic abdominal cases presenting gastric, duodenal, or right iliac symptoms in which at the operation no organic disease is found, the fixation of a colon and cæcum freely mobile on account of the persistence of the mesentery appears on the whole to give the best results hitherto attained by surgical measures. Failures are met with, but the same may be said of any other operation in surgery. On the other hand, in the majority of cases considerable relief is gained by the patient, and in some the results may be spoken of as brilliant.

In addition to these conditions I might mention two cases of long standing and persistent diarrhœa which had resisted all kinds of medical treatment, and in which at the

operation there was no evidence of organic disease in the colon. Both these cases appear to have been completely cured by colopexy.

Conclusions.—Seeing that so close a relationship exists between all the organs referred to in this paper that morbid processes taking place in any of them may affect the rest and that symptoms referred to one of them may be due to disturbance in another, the whole of these structures should, from a surgical point of view, be considered as forming part of one system. Many other parts and organs may with increasing knowledge also be found to enter into the relationship. Eventually, indeed, all the abdominal organs may come to be considered from the operative point of view as one whole. At least, as far as these particular structures are concerned, every operation should aim at a complete examination of all of them, and as far as practicable at the correction of whatever faults should be found in any of the members of the system. This will entail in every case a long incision, and the best incision is that situated to the right of the middle line with displacement of the rectus outwards. Through the wound thus made, which does no damage to the nerves or muscles of the abdominal wall, complete access can be obtained to every part of the abdominal cavity, and all these organs can be examined and dealt with without difficulty or undue disturbance to the patient.

Abnormal mobility of the proximal colon owing to the persistence of its mesentery is a factor which cannot be neglected in the surgical treatment of chronic digestive disorders, particularly in those where no gross organic disease is found at operation.

While the drag of this part of the large bowel cannot be recognised as the invariable cause of duodenal and gastric ulcers and gall-stones, it is probable that it may be one of

several factors concerned in their production, and that it acts mainly through the sympathetic nervous system. The operation of colopexy should not at the present time supersede other surgical measures in the treatment of gastric and duodenal ulcers, though it may be a useful adjunct to them.

Fixation of the mobile proximal colon is worth a trial in conditions associated with mobility of the right kidney.

THE PRESENT POSITION OF PSYCHOTHERAPY.[1]

BY

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PSYCHOTHERAPY has been very much in the public eye during the last few years, and has occupied a good deal of space not only in the medical press but also, unfortunately, in the lay press of the country. It has enjoyed a wave of popularity such as frequently sweeps over medical ideas, not always to the benefit of true scientific inquiry or even to the just appreciation of the subject which has temporarily become so popular. Appendicectomy, colectomy and vaccine therapy have been striking examples in recent years, and to-morrow we shall doubtless see vitamines occupying a similar position. After such waves there is inevitably a reaction, with the result that many really valuable observations may be lost sight of. With regard to psychotherapy, the time has undoubtedly come for everyone to make up his mind what the real value of this method of treatment is and what are its limitations. The first thing to notice is that psychotherapy is nothing new. Every good physician since

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Hippocrates has practised this art in some form or other whenever he has considered his patient as a human being and not as a list of physical signs or laboratory experiments.

In the last fifty years, however, since Charcot first drew attention to the true nature of the neuroses, psychotherapy has been gradually evolved into a more definite scientific entity. Since 1914 the large numbers of neuroses dependent on the war has given us a field of study so productive that an enormous amount of progress has been made in estimating the value of the various theories previously held and in extending the scope of psychotherapeutic treatment. The three classical branches of psychotherapy are suggestion, persuasion, and analytical treatment. In the past there has been a great tendency to separate these one from another, and practitioners have devoted themselves to one particular branch to the exclusion of the other two. Most people are now satisfied that all are necessary in their therapeutic armament.

Suggestion has been practised consciously or unconsciously ever since medicine first became a study. The so-called miraculous cures of the Middle Ages were undoubtedly the result of suggestive measures, and to-day we still have these apparent miracles with us, though we now know that they depend on a perfectly normal attribute of the human mind. When we say that a person accepts a suggestion we mean that he accepts a proposition with conviction, without any rational grounds for this belief, and frequently in spite of the presence of adequate and rational grounds for its disbelief. In this process we must recognise two factors, firstly the suggestion which is offered and secondly the suggestibility of the patient. The suggestion may come to the patient from himself or from his environment. Suggestibility is a normal characteristic of mankind which may be increased by certain abnormal

factors. The suggestion may be harmful or beneficial to the patient, and may result in the establishment of a symptom or in its removal, and in studying either the establishment or removal of such symptoms we must always consider both of the two factors mentioned above. The stronger the suggestion the less suggestibility in the patient need be looked for, and *vice versa*. If we construct two scales, one representing suggestibility and the other the strength of the suggestion, and place them inversely, we find patients developing symptoms at all points in such scales. A very strong suggestion will establish a symptom in a patient whose suggestibility is not much greater than that of the normal individual. For example, the actual presence of a disability in the patient's own person very readily suggests its continuance if no counter suggestion is brought to bear. When an injury has bruised but not divided any of the peripheral nerves a temporary paralysis is induced, but in course of time, when the nerve recovers from the bruise, potential power is restored to the limb. If, however, no suggestion has come to the patient that he can move his limb he will continue to accept the belief that it is paralysed, and he will continue to keep it immovable. Such cases have been of very great frequency after surgical injuries during the war, and treatment by massage and electricity, by tendon division or transplantation, have simply served to intensify the patient's conviction of the seriousness of his injury without doing anything to relieve it. On the other hand, it has been a very common experience that a few minutes' persuasion and counter suggestion have been sufficient to restore the function to a limb which has been paralysed for years, in spite of continual electrical or massage treatment. At the other end of the scale we have men who are so pathologically suggestible that the least thing will cause the establishment of a symptom. In such cases examinations by the physician,

emotional shock, imitation from other patients are all that is required to produce the most extensive paralysis and disorganisation of function. Between these two extremes all varieties of cases can be found.

It is primarily to the credit of the French that it was discovered that such symptoms may be relieved by counter suggestion, whether by means of hypnosis or in the waking state, and frequently most dramatic recoveries have resulted from this process. Hypnosis is a condition analogous to sleep, in which a patient is temporarily withdrawn from the control of his rational and critical processes. In this state suggestions which do not run counter to his innate beliefs and tendencies are readily accepted, and hysterical symptoms can be induced or removed with ease. Similar results may be obtained without hypnosis by suggestive operations, electric shocks, baths and the like. It is often found that recovery from a symptom which has taken place under hypnosis is not lasting. For example, a patient who had had a contracted hand after a wound to his fingers for four years had been frequently hypnotised, with the result that his hand relaxed during this process but immediately contracted again on his being awakened, but ultimately the symptom was easily removed by persuasion. For this reason I consider that a method of treatment which allows the patient full insight into what is being done for him, and affords him an explanation as to why his disability originated and why it can now be removed, is much superior.

Another criticism of suggestive treatment is that if used alone it does not take into consideration the question as to whether the patient is pathologically suggestible or not. With this question I will deal presently.

The method of treatment whereby the patient is made to understand the whole process of the origin and

of the cure of his disability may be described as persuasion, and for the removal of hysterical symptoms dependent on suggestion I consider it is far the best except in one condition, namely amnesia. In this case hypnosis is undoubtedly the method of choice, for memories can frequently be restored at once which would otherwise take weeks or months to elucidate.

In dealing with any case which is brought before one for the purpose of psychotherapy, it is necessary first of all to determine which of the symptoms are due to suggestion, and these symptoms I would describe as hysterical, following Hurst's definition. When these are found they should be removed as early as possible, and the ideal method for this purpose is as follows. The patient must be seen in a room by himself, and not amongst a crowd of others or in a noisy ward. He must be impressed that the whole object of the physician is to overcome his disability and to help him, and so far as possible he must be impressed with the physician's own belief, not only in the desirability of removing this symptom, but that it can be removed at once. When confidence has been established it must be explained to him how the symptoms originated and under what circumstances he accepted the suggestion. He must be persuaded that in spite of what all others have said to him his trouble does not depend on structural defect but on his own mental attitude. He must be shown how this particular function which he lacks has been forgotten by the rest of his personality, and he must be impressed with the importance of relearning how to control this function. Then with constant encouragement he is persuaded to make attempts to exercise the lost function, whether it be that of sight, hearing, movement or anything else, and the ideal which the physician must set before himself is that he shall not leave him until the restoration of the lost function is

perfect. Often this can be achieved in a relatively short time, twenty minutes, three quarters of an hour or so, but sometimes it may take three or four hours. It is not always possible to give this time to one patient, but if it can be done it is time well spent, for if once the patient is perfect he only needs very slight supervision to see that he does not drop back into his old habitual ways. However, when the symptom is removed it must be clearly understood that the physician has not finished his work. He has not yet determined whether the suggestibility of the patient was normal or not, and four to six weeks of observation is necessary to see whether an anxiety neurosis may not have been underlying the hysterical symptom. This is usually the case in civilian cases, but by no means always so in war cases. In these the anxiety condition was frequently so slight that the removal of the hysterical symptom was all that was required to cure the patient.

If it is found that the patient is abnormally suggestible after removal of his hysterical symptom, or if he presents the symptom of an anxiety neurosis, the only treatment that in my opinion is of any use is some form of analysis. Under the heading of anxiety neuroses I propose to include all those conditions which are usually described as neurasthenia, and also the somnambulistic states on the one hand and psychasthenia on the other. The reason why I do this is that I consider all these conditions to be primarily due to the occurrence of mental conflict, and the treatment consists in the abolition of this conflict.

The term neurasthenia would be much better confined to the condition to which it was originally applied by Braid, namely the real exhaustion of nerve cells. This is not common, but does occur after really excessive physical work, such as long and arduous retreats in war time or after debilitating disease. It is in these cases that the Weir

Mitchell treatment does good; but recovery ought certainly to take place as the result of three or four weeks' rest, and if the patient is no better within this time the diagnosis must be revised, and organic disease being excluded, some form of anxiety state will certainly be found to be present.

The knowledge gained in dealing with the anxiety neuroses depends on the work of the schools of Vienna and Zurich, and in order to understand their pathogenesis and the method of treatment it is necessary to consider briefly the views of these schools. Patients suffering from this trouble always present a certain degree of anxiety accompanied by its physical manifestations which the French call angoisse. This anxiety does not depend on anything very definite, and the patient is at a loss to explain why he should experience this unpleasant emotion. He will at the same time complain of insomnia, bad dreams, loss of power of recall and poor concentration. In more severe cases he will describe definite obsessions, whether these take the form of phobias, manias or of obsessive ideas; or on the other hand he may partially lose consciousness of what he is doing and go through various pantomimes, to which no apparent meaning can be attached. Such conditions are described as somnambulisms, and vary in complexity from mild states of mental aberration to the full-fledged double personality.

Until Freud commenced to study the neuroses no adequate explanation had ever been given for these symptoms, and they seemed so nonsensical and absurd that the patients were generally dismissed as too childish and silly for the serious consideration of the physician. Freud pointed out, however, that there were many every-day activities, prejudices and mannerisms of the normal individual which were almost equally inconsequent and inexplicable. Being a determinist, he concluded that this could not be the result

of mere chance, but must be the result of certain influences on our behaviour of which we are not conscious, and the part of the mind which was involved in the production of these mannerisms and also of the symptoms of the neuroses he termed unconscious.

Further investigation has shown that this unconscious part of the mind is made up of material derived from two sources. Firstly, there is the predisposition of the individual or the inborn tendencies which in large measure correspond to the instincts of the animals, such as the tendencies to fear, anger, disgust, and the impulses to action which depend on these emotions. Secondly, there are those events which happen to us and our reactions to them which we have considered too difficult or unpleasant to attach to our personality, and have therefore pushed away and refused to admit as applying to ourselves.

Such experiences, if sufficiently emotional and sufficiently concerned with our own activities, may not only be pushed out of active consciousness but also be almost completely divorced from our ego, and consequently may remain in the unconscious part of our mind, from where they exert their influence, although we are no longer aware of their existence. Just in so far as this unconscious material is moulded and welded together into a harmonious whole and not disturbed by discarded experiences which are too strongly emotional so will the individual be stable and of strong character, but just in so far as this material is inharmonious and conflicting so will the individual be neurotic.

Inasmuch as none of us reach absolute perfection in the structural harmony of our minds, we all occasionally act as the neurotic does, and indeed when we examine the latter's behaviour we find that it differs rather in degree than in quality from that of the normal individual. When such a lack of harmony exists a mental state is produced

which is essentially disagreeable to the patient, so that he does his best to throw the whole of the incident which is producing the disharmony out of consciousness by the process which Freud has called repression. Further, the patient prevents its recurrence to consciousness by setting up a barrier which refuses it admission. This has been termed the censor. The influence of this repressed material on the individual life and behaviour depends, as has been said, on its intimacy with the patient's personality and the intensity of emotion which is attached to it. Incidents of low emotional intensity are repressed every day and cause no trouble, but those which exert enough influence on the personality to make completely successful repression impossible are the factors which underlie the neuroses. Such imperfectly repressed material acts as a dynamic foreign body in the consciousness of the patient, and consequently it tends to be manifested through the barrier of the censor, either directly or in symbolic manifestations of itself, in the form of the various symptoms of the psycho-neuroses, and it is not difficult to show how each symptom will depend on unsuccessful repression of a conflict. The treatment of the anxiety neuroses depends on the discovery of the repressed material and in harmonising it with the personality of the patient, a process which will vary in difficulty with the nature of the repressed material and the ability of the patient to adapt himself to circumstances. For this purpose Freud introduced the process which he called psycho-analysis.

Just as the symptoms of the psycho-neuroses are more or less symbolical expressions of unconscious material, so Freud found that this material also found expression more or less directly in the individual's dreams and in his mannerisms and eccentricities of behaviour. Hence we have three avenues of approach for investigating the unconscious activities in the patient's mind, some of which are

supposed to be in conflict with each other. Firstly, we have the circumstances of these symptoms, how they arose, what they seemed to be dependable upon, what these factors in turn depended upon and so on, until they are traced to their primary cause; secondly, the observation of small mannerisms which might indicate what sort of tendencies there were and how they were making themselves felt; and thirdly a study of an analysis of dreams, which according to Freud is the royal road to the unconscious and consequently to the discovery of the origin of the mental disharmony. The process whereby the required information is usually obtained from these sources is called free association. Starting from the various elements of the dream, from a symptom, or a mannerism the patient is encouraged to allow his ideas to course through his mind without criticism and to relate them to the physician without withholding anything. By this method dynamic unconscious material will sooner or later make its appearance, and the basis of the conflict may be discovered. Other more technical methods, such as word association, are often of use in difficult cases. So far most psychotherapists will find themselves in agreement, and there seems to be very little doubt as to the correctness of the views so far enunciated.

It must be remembered that although these conceptions of the mental life of the individual may not have originated with Freud, yet he was the first to really formulate them in a definite theory, which had as its pragmatic object the treatment of the neuroses. For this work he deserves his due meed of praise, and will no doubt get it from posterity. It is, however, in the detailed application of the general theory of mental conflict that we find the differences which have split the psychotherapeutic schools so far asunder and have led to the disruptions which have taken place.

The Freudian school holds that the repressed conflict

is always between the sexual tendencies of the patient and his environment, and therefore both the symptoms of the neuroses and the incidents in the person's dreams are necessarily sexual symbols. There has been more ink spilt and more heart-burnings endured over this word sex than over anything else in psychotherapy. This is very largely due to the fact that his critics, and even his followers, have forgotten the sense in which Freud used the word sex. We are too apt to consider sex on the purely appetite level, and forget that it has aspects not only on this level but also on the emotional and intellectual level. We all recognise that a woman's feelings towards life are very different from a man's, also that the average woman has a different intellectual outlook upon her environment to that of the average man. As an example of the common restriction of meaning of the term sex we have the extraordinary ideas relating to homosexuality. If anyone ventures to say that an individual has homosexual tendencies everyone jumps to the conclusion that it is meant that the unfortunate patient is guilty of grossly nefarious practices on the appetite level, whereas all that may really be implied is that the patient's emotional or intellectual attitude is that which is usually associated with the opposite sex, so that in his relationship with his own sex on these levels he takes up abnormal standpoints. That this confusion should exist among Freud's critics is reprehensible but perhaps natural, but that it should exist amongst his followers is perverse.

The second point that the Freudian school lays stress on is that the conflict was always started by some incident which usually took place in very early childhood and was then repressed. They go further than this, and say that the explanation of the amnesia for incidents in the first few years of life is due to the fact that many of these cases were of a perverse sexual nature and consequently actively

repressed. This seems rather far-fetched, for surely the more simple explanation is that the young child has not got sufficient apperception-mass to which he may attach his memories.

The other point of the Freudian school is that treatment consists in discovering this real incident, and that once it is laid bare the patient is or should be cured. Experience has shown that this is by no means always the case.

Jung of Zurich diverged from this teaching in certain important respects. He denied that the conflict is always between the individual tendencies and the environment, but he considers that conflict may arise between the different tendencies themselves within the patient's own mind. Further, that the sexual tendencies were by no means always involved, though they might be and certainly were involved in a large number of cases. He admits that early experiences might be responsible for rendering the patient unadaptable to his environment, but that the onset of any given neurosis depended primarily not on the incident in the past but on something in the present which the patient could not face and which he was endeavouring to shirk. As a result of this shirking he tried to withdraw himself from reality and regress to the attitude towards life characteristic of an early stage of existence; for example, when an adult instead of accepting responsibility and acting for himself regresses to the infantile habit of mind and expects others to make up his mind for him and take on his responsibilities. The extension of this theory of regression which underlies Jung's theory of the correspondence between individual dreams and racial mythology, though a subject of intense interest, is too complicated to enter into here. Lastly, Jung laid it down that treatment did not simply consist in laying bare the conflict and in showing the patient that he was not always adapting himself to life and that he was shirking his

difficulties, but that the physician was responsible for the reconstruction of the patient's attitude, and he must see to it before he leaves him that he is once more enabled to adapt to life as it is.

Adler of Vienna announced a theory of the utmost importance, which one frequently finds applicable in the cases with which one is called upon to deal. He maintained that the neuroses were due to a conflict between a consciousness of inferiority which the patient refuses to admit and what he calls the will to power, which is a mechanism whereby the patient strives to prove to himself the absence or unimportance of his physical abnormality.

Such, then, is a very brief description of the tendencies of the continental schools of psycho-analysis. A school of psychotherapists is growing up in this country whose views were admirably stated by Ross at Cambridge last June. They refuse allegiance to any one continental school, though they find themselves in closest approximation to Jung. They strive to take the valuable elements from each and try to avoid their excrescences. While admitting that sex is often the basis of conflict, they consider the insistence upon the universality of sexual conflict is very misleading and tends to absurdity. As, for example, the statement of Ferenczi that he has traced many neuroses to the fear of the fœtus at passing through the maternal passages. They consider that every case must be considered on its own merits as to the conflicts involved and the symbolism employed by the individual's consciousness. While recognising that every individual thinks symbolically, they regard the insistence that certain incidents and pictures in dreams always have the same symbolic meaning as dangerous or even ridiculous: for example, the statements that all dreams concerning Zeppelins have necessarily a phallic insigficance.

A good example of the importance of not insisting on a general symbolism in individual cases can be given from my own experience. A man had a dream about snakes. Admittedly the significance of snakes is universally phallic in folk-lore, but in this man's case it referred to a particular emotional experience during the war in which a large snake had come over a wall under which he was standing and had slid down over his shoulder. It was, in fact, an ordinary war dream.

They further consider that the insistence that dreams are necessarily expressions of positive conations or wishes is erroneous, as they may just as well be expressions of negative conations or fears. While admitting the necessity in a few cases of the extended and elaborate analysis preached by the Freudian school, they believe that as a rule care should be exercised to keep the analysis within bounds and only try to discover the conflicts actually causing the neuroses, as the enormous amount of material elucidated by the former methods tends only to mystify the patient and the physician. Again, while the elaborate processes of dream analysis and word association tests may be of great help in certain difficult cases they are not necessarily required as a routine measure. They also hold that the physician has not completed his duty to his patient until he has established him in a successful occupation in such a way that his self-confidence and self-respect are restored. Further, they do not believe that psychotherapy as a whole and analytical methods in particular are or can be universally successful, and recognise that the chief barriers to success are the lack of sympathy, open-mindedness and patience on the part of the physician, lack of intelligence or the desire of recovery on the part of the patient, or his complete inability to face and adapt himself to the conflicts which underlie his neuroses.

In dealing with an anxiety neurosis, the object we have

before us is to define the mental conflict which is causing the trouble and to make the patient face it and realise its actual value, and to help him to find some solution whereby it will be resolved. To do this we have first of all got to take a careful history of all that the patient can remember about the onset and progress of his disease, and to investigate more or less fully his general behaviour, and determine what sort of mental type a patient is. From our knowledge of psychology we may then know the sort of way in which he will act to given circumstances in his environment. From gaps and peculiarities in his story we can get some indication of repression and incidents which have been banished to the unconscious mind. In the progress of our talks with him we notice his mannerisms, his prejudices and his eccentricities. We ask him to tell us about any dreams he can remember, and I do not consider it is necessary or desirable to try and analyse and find the meaning for each one, for by careful attention to them we can often get a great deal of help, and very frequently one particular dream will give a key to the whole process.

It would be impossible in a short paper such as this to attempt to give any outline of the details of analytical treatment, but perhaps an example will show the sort of thing which is achieved.

A lady suffering from many neurotic symptoms was generally regarded as very hysterical, and had an intense phobia of all illness. This dread of illness was found to go back to an occasion when she was anæsthetised for the purposes of examination. It was found that she had no objection to the examination, but that it was the first time when the thought had occurred to her that she might die. This raised the problem as to why she was so abnormally frightened of dying, and from her emotional reactions at the time it was obvious that death had a terror for her quite out

of proportion to what is normally the case. After further investigation it was found that she had been brought up in early childhood on strict Calvinistic lines, and she had early attained great dread of the hereafter and the punishment it might involve if she did anything wrong. Being very musical and always intended for operatic work, she had been taken when about seven years old to see *Faust*. This was the first opera she had seen, and she was very much impressed by it. Soon after she broke a favourite vase of china belonging to her mother, of whom she was rather frightened. In terror lest she should be discovered she hid it in the dust-bin, but next day to her horror the dustman came to get this away while she and her mother were present. In her intense anxiety she resolved that if the china was not seen she would sell her soul to the devil. She was not discovered, but it quickly came to her mind what an appalling thing she had done. When this memory was brought up to her she went through a considerable emotional crisis and said, " Well, no wonder I am afraid to die or afraid of being ill. What shall I do ? " She was still looking at things from her childish point of view. When, however, one had talked to her for a time she was able to see that a child of seven can hardly be held morally responsible for an action the meaning of which she did not really understand, and which had been undertaken in a moment of intense emotional stress. After this was cleared up her entire attitude towards life changed, and she was able to go about her work and attend to social duties in a way which had been impossible for years. She no longer imagined that every little pain meant instant death, and consequently her own happiness and that of those about her was improved to a very marked extent.

In conclusion, I would like to lay down the following points. So far as the psycho-neuroses are concerned some form of psychological treatment is always necessary, and

purely material therapy, whether massage, hydrotherapy or drugs, if used without this will really do the patient more harm than good, though such measures may be advisable or even necessary if strictly subsidiary to psychotherapy.

All the various methods of psychotherapy are useful for removal of hysterical symptoms, but persuasion is the method of choice. In some cases this is sufficient in itself, but in other cases, where an anxiety condition underlies the symptom, this must be treated by some form of analysis.

In anxiety neuroses some degree of analytical treatment followed by reconstructive measures are necessary.

While hypnosis is useful in removing certain symptoms it is not satisfactory as a general therapeutic measure, because it does not give the patient sufficient insight into his own condition, and never explains all the whys and wherefores of his illness.

Psychotherapy, and especially psycho-analysis, is frequently grossly abused by practitioners who will not distinguish between functional and structural change, and thereby render themselves ridiculous, as for example did the exponent of the art who claimed with some pride at an important medical meeting to have cured a case of epistaxis by eighteen months' psycho-analysis.

The present-day tendency for the laity to practise psycho-analysis is dangerous and pernicious, and the practice of society ladies psycho-analysing their butlers as described in the *Daily Mail* is indecent. On the other hand, many practitioners are blind to the possibilities of psychotherapy, and outside the realm of the psycho-neuroses many conditions commonly regarded as essentially organic can be dealt with by this method. As examples I may mention the cases of pernicious vomiting of pregnancy described by Hurst, in one of which the ammonia coefficient reached 25. All these were ordered by the gynecologist to have the uterus emptied

within twenty-four hours if life was to be saved, and all of them were cured by psychotherapy during that interval and have gone on to full time without further accident. Also two cases of deaf-mutism dating from early infancy who had been cured, one at the age of seventeen and the other at twenty-two.

In medical education the absence of any teaching of medical psychology is a serious deficiency. The course of lectures on mental diseases does not supply this want at all in most schools, and consequently the medical student enters into practice with no knowledge of how to deal with his neurotic patients, which form a very large proportion of his practice, and, what is almost more important, has no organised knowledge of how to approach the subjective symptoms he meets with, which as Sir James Mackenzie has said are really just as important as the objective signs.

THE TEETHING MYTH.[1]

BY

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TEETHING is a matter which looms largely on the horizon of those who have the care of infants, be it in the nursery at home, in private practice, in hospital, or at the various Welfare Centres which are springing up to-day.

Teething is a subject with a long history. Hippocrates stated that at the approach of dentition itching of the gums, fever, convulsions and diarrhœa occurred, especially in those who were fat or had constipated bowels. Most

[1] A paper read at a Meeting of the Bristol Medico-Chirurgical Society on Wednesday, 9th March, 1921.

of the ancient writers deal with the subject in much the same tone, though the diversity of opinion as to which were the most difficult teeth and which was the worst season of the year lead one to suppose that they were not very sure of their ground. Some blame the incisors as they are the sharpest, others the molars as they are the bluntest.

In the sixteenth, seventeenth and eighteenth centuries every conceivable ailment of infants was attributed to this cause. The edentulous period, that is, the first six months of life, did not defeat these enthusiasts, as they called this the period of the " breeding of the teeth." Very divergent views were held as to the actual cause of the trouble, though the main one was the keeping back of the tooth by a hard and resisting gum. A large number of methods for softening the gum were devised, which varied from the simple process of rubbing the gums with butter or decoctions of herbs to the more elaborate remedies, such as sucking pig's brains, the milk of a bitch, or blood from a freshly-killed cock's comb. Many weird ideas sprang up at this time, some of which survive to this day, a particularly pernicious one being that an ear should never be allowed to stop discharging till the last tooth is cut.

From time immemorial mothers and doctors seem to have had the idea that nature must be helped to break the gum, and many and varied are the implements that have been recommended. A wolf's tooth was at one time popular, and, worse to relate, a finger-nail always had its vogue. This practice survives to this day. Ambrose Paré was the first surgeon to advocate the opening of the gums with a lancet. It came about in this way. He and the court physicians were hunting about for the cause of death in a child aged eight months, the son of the Duc de Nevers, and they found nothing till he opened the gums and discovered, in his own words, " all his teeth as it were in array ready to

come out, which, had it been done when he lived, doubtless he would have been saved." Paré performed this operation on all his own children, though he does not give the mortality. Opening the gums as a surgical operation seems to have become fashionable in England in the early part of the eighteenth century.

In the early part of last century dentition as a cause of disease looms largely in the text-books, and half the infant mortality was attributed to it. In the middle of the century one finds doubts creeping in, earlier in the French than in the English books. In the Registrar-General's reports dentition is progressively weakening as a cause of death. In 1904 there were just under 3,000 deaths certified from this cause, while in 1918 1,011 was the total.

In the modern text-books the subject is sometimes dealt with by the simple process of hedging. In one system on children's diseases the subject is ignored as though it were indecent. Dr. Still seems to be a confirmed believer in the evils of teething, his main argument being that he cannot believe that so many generations of intelligent parents can have been deceived, an argument which is most fallacious. It is no longer the custom to protect children from the evil eye, from being overlooked, or from a "sending," yet countless generations of intelligent parents did this. No one sends scrofulous cases to be touched by His Britannic Majesty George V., yet, if we are to believe Macaulay, not only "intelligent parents," but the highest physicians and surgeons in the land believed in this practice for years. Charles II. spent considerable time in "touching," and William III. became most unpopular because he frankly disbelieved in it and strove to cut down their numbers. Many similar instances occur to one, and there is no need to labour the point.

One of the chief difficulties of arriving at a just estimation

of facts lies in the unfortunate truth that no one knows the exact method by which a tooth is cut. The only thing we know is that in due course a tooth is either pushed up or moves up, and the gum atrophies over it. One thing is certain, and that is that the tooth does not bore its way through like a gimlet, which is the popular idea. Cutting teeth is probably not an essentially painful process. No one maintains that every tooth causes pain, and it is reasonable to suppose that if one is painful all would be. The second dentition, though now the erupting tooth causes atrophy of the fang or the milk tooth and frequently has to pierce the gum as well during eruption, is painless unless the milk tooth be carious. A wisdom tooth is not a fair test, as it frequently cannot get through owing to want of room in the gum. If there is plenty of room a wisdom tooth is cut painlessly, and many people are unaware of the process.

There is yet another pitfall. A baby starts cutting its teeth at between four and ten months old, and the process continues until the end of the second year. Sometimes the teeth appear rapidly, sometimes there is a long pause. It is quite impossible to say, in a given case, when a tooth is seen to bulge the gum, how long it will be before the tooth will pass the time-honoured test of ringing on a metal spoon. One tooth will appear before its impending arrival is suspected while another will bulge the gum for as much as a month before it shows through. In fact, it comes to this, that if one looks into any baby's mouth from four months to two years old it is possible to find that a tooth is either bulging the gum, just coming through, or has actually just come through. Therefore one who believes in the evil of teething can always find an excuse for an illness in a baby's mouth.

The so-called signs and symptoms of teething may be divided into two classes, the mild or physiological ones (being

about his teeth) and the difficult or pathological ones (cutting his teeth hard).

Now to go through these signs and offer an alternative cause in each. To take the physiological ones first.

Dribbling.—A normal baby starts dribbling at about three or four months old, due to the functions of the salivary glands developing. This goes on till the infant is a year old, when it probably learns to swallow its saliva like a reasonable member of a civilised community. As it starts before the eruption of the teeth and ends long before the completion of the process, surely dentition can have nothing to do with dribbling.

Biting on dummies and hard rings.—Anyone who has watched a baby develop must have observed that as a function develops the instinct to practise it develops at the same time. With the eruption of the teeth the instinct to bite appears, so that a baby will bite anything that is put into its mouth. This fact is no more evidence of itching gums than a baby which sits up patting the table is of itching fingers.

Putting objects into the mouth.—The principal impressions an infant obtains depend on its relation to food and drink; obtaining nourishment is the largest thing in its consciousness, and experience teaches it that all the best things in life go into its mouth. The lips also are used as a means of touching and feeling the quality of objects. In the twelfth week the movements of the hands become volitional, and what more natural than to use this feat by putting objects into its mouth.

Being cross and perverse.—In this matter babies differ little from their parents—they have their good days and their bad days. This variability of temper, as one would expect, becomes more marked as the mind develops. It is a comforting though fallacious doctrine for parents to attribute natural sin to teething.

Rashes of various kinds.—Red gum, which is a form of urticaria, is probably due to the ingestion of foreign protein. It is much more common in the first three months of life. Miliaria is due either to pyrexia or to too many clothes, but is invariably attributed to teething. Septic and irritative rashes are due either to infection or irritant forms of soaps and cosmetics.

Sore gums and gingivitis.—This is very uncommon, and is almost invariably caused by the pernicious practice of rubbing and irritating the gums with hard objects. Scurvy is another cause, though it is very uncommon in this district.

Now the pathological signs of dentition.

Fever, restlessness, fretfulness and disturbed sleep.—Surely it will be granted that these are the common manifestations of infant disorders from vaccination to concussion of the brain.

Gastro-enteritis.—Diarrhœa and vomiting is an extremely common ailment of infants, as common as teething itself, but the following points may be enunciated: (1) Bottle-fed babies are more liable to attacks than breast-fed ones in the first seven or eight months of life, the age they start to crawl, pick up dirty objects and put them into their mouths; (2) that the number of attacks of diarrhœa varies in inverse proportion to the care bestowed upon the baby; (3) that gastro-enteritis is infinitely less common in the class who do not use dummies or put dirty fingers and other objects into a baby's mouth; (4) that in Infant Clinics it fairly easy to guess which babies will "cut their teeth with diarrhœa" from the personal appearance of their mothers and the reports on the cleanliness of their homes by the visitor.

From the foregoing it may be inferred that infection is the paramount cause of gastro-enteritis in babies.

Colds in the head.—The younger the baby the more susceptible is it to nasal infection and to the disastrous spread

of that infection to the middle ear and bronchial tubes. Colds, bronchitis and otitis media are far commoner in the first three months of life than during the period of dentition. Out of 40 infants under my care in the last two years who had bronchitis 32 definitely had their first attack before they were three months old. No one will disagree with the assertion that an infant that has once had bronchitis is more liable to subsequent attacks than one who has escaped. Therefore why, when a baby has had three attacks of bronchitis and two of otitis media in the period before dentition is every similar attack subsequently attributed to teething? Moreover, it is almost always those mothers with chronic nasal catarrh and its aural complications whose babies cut their teeth with a cold, bronchitis and discharging ears.

Convulsions.—Infants, owing to the surprising instability of their nervous system, are particularly prone to convulsions. It is impossible to deny that peripheral irritation may start a convulsion, though it is far more probable that a toxæmia is at the bottom of it. Convulsions are commoner in the first three months of life and in the edentulous rickety child.

It is not denied that the eruption of a tooth may be painful. Everyone is familiar with the peevish infant with dry, red, painful gums, pyrexia, sometimes alarmingly high and possibly in convulsions. Such a child, however, invariably has gastro-enteritis or bronchitis, or both. Why then is not the painful dentition secondary to the catarrhal disease? It is a platitude to state that the mouth is only a part of the gastro-intestinal tract; the tongue is a notoriously valuable guide to its condition. What more natural, then, when there is gastro-intestinal or respiratory infection, that the gums, where active change is taking place, should be involved in the general debacle? It is maintained,

therefore, that painful dentition is a secondary complication and not a primary agent.

The whole field of medicine is full of so-called scientific theories to explain popular superstition. Some may be correct, the majority are incorrect, but all are equally plausible. Teething is no exception, and various theories have been given to account for the evils.

Of course there is the reflex theory. To make this a more plausible one it has been ordained that the fifth nerve supplies the teeth, a nerve which has communication with most of the cranial nerves, including the vagus, and with the sympathetic and para-sympathetic systems. The net is wide-spread. In one modern text-book there are beautiful diagrams showing the connection with the fifth nerve, through the otic ganglion to the vaso-motor nerve of the artery of the ear drum. This to explain otitis media in teething is most unconvincing. The fons et origo of this mysterious reflex is supposed to be the pressure of the base of a tooth on a nerve ending because it is being kept back by a resisting gum. Were this true it seems that pressure on a baby's gum, or the fact of a baby biting on a hard ring, would exaggerate the reflex, yet the same people affirm that the infant is relieved by this procedure.

Another theory, older and not so plausible as the former, is the pyrexia theory. Teething causes pyrexia, pyrexia causes chill, and chill accounts for everything. The obvious fallacy of this is that the eruption of a tooth does not *per se* cause pyrexia, as it is reasonable to suppose that if one did all would, a fact which no one would affirm. Moreover, chill has rather gone out of fashion of late years as a cause of disease.

The writer has discussed this subject with a certain number of people of experience, lay and medical. Among doctors there are two attitudes taken on the subject. There

are those who believe in the evils of teething, and there are those who in their heart of hearts do not believe in it, but take the view that it is a very innocent and eminently useful diagnosis with which to appease an anxious mother. It is no use for the first class to read these lines. They learnt it at their mother's knee, and it is as firmly fixed in their minds as their religious or political beliefs. If one arose from the dead it would not convince them. It is to the second class that these remarks are addressed, for the following reasons. All the minor ailments of infants, with their disastrous sequelæ, are largely preventable and avoidable by careful management. Eruption of teeth, on the other hand, is an act of God and unpreventable. One gets better results if one tells Mrs. Smith of Pennywell Road that if she will persist in licking her baby's dummy after it is dropped before putting it back into his mouth, whereby he acquires the flora and fauna of the road and of her septic teeth at the same time, she must expect him to get diarrhœa, than if one orders a teething powder ; again, if one tells one's prosperous patient that if she will sack her adenoidy under-nurse there is a hope that her son and heir will not cut his next tooth with bronchitis. Furthermore, most babies will do better without the unprovoked assaults upon their insides in the form of teething powders. Lastly, there is rickets. There is no more easily or commonly overlooked disease than early rickets. This applies to rich and poor alike. These children are particularly disposed to the so-called teething troubles, attacks of pyrexia, convulsions and catarrhal infections of the respiratory and intestinal tracts, and it is this very " teething diagnosis " which puts practitioners on the wrong track, a really disastrous state of affairs, as rickets is a very easily cured disease.

Progress of the Medical Sciences.

MEDICINE.

The knowledge of the **blood chemistry in disease** is becoming of wider application largely as a result of the labours of the American schools of medicine. Since Folin[1] working with 10 c.c. of blood introduced a technique enabling one to estimate all the important non-protein nitrogenous elements of the blood an enormous amount of clinical and pathological work has been done in diseases of the kidney, gout, cardiac failure, and diabetes. In diseases of the kidney, whether primary or associated with cardiac disease, the examination is made mainly with a view to determining the presence or absence of non-nitrogenous waste substances; in diabetes to ascertain the extent of the hyperglycæmia and the state of the alkali reserve or "acidosis." The normal values for each constituent are now well established, although minor differences as to the exact figures still exist. Each normal constituent has, it seems, its own degree of variation, creatinin–N (1–2 mgs. per 100 c.c.) at one end of the scale showing the least variation, with urea–N at the other end showing greater variations (11.5 to 20 mgs. per 100 c.c.). The standard time given for collection of the blood to establish the normal percentages is before breakfast, after a fourteen-hour fast. The upper limit or "threshold value," a term which assumes that excretion is a mechanical effect of an accumulation of the particular substance in question beyond a certain concentration, is given for urea by MacLean[2] as 40 mgs. per 100 c.c. The majority of writers give a figure below 30 mgs.* In excreting the creatinin of the blood the

* E. L. Kennaway[8] gives 15 to 60 mgs. per 100 c.c. as the normal for urea in perfectly healthy subjects. These figures are obtained from normals without reference to the time of obtaining the specimen or the control of diet.

Gettler and St. George,[9] from figures based on 15,000 determinations, define normal limits as follows:—

	Normal.	Nephritis.	Cardiac Failure.	Diabetes.
Number of cases studied	—	600	350	—
Non-protein, Nitrogen	25–40	40–460	35–220	—
Urea–N	10–18	20–375	18–180	—
Creatinin	0.1–0.8	2–42	1.5–12	—
Uric Acid	0.5–3	3–17	2.5–7	—
Sugar	60–110	75–160	70–135	105–1010
Alkali reserve	53–80%	40–75%	48–75%	60–70%

All figures throughout represent milligrams per 100 c.c. blood.

kidney concentrates 100 times, in the case of urea 80 to 100 times, and with uric acid (blood uric acid 2 to 3 mgs.) 20 times. In renal insufficiency uric acid will be the first to accumulate and creatinin the last.

Fortunately for the practical application of these estimations to clinical medicine it is found that there is a general parallelism between the accumulation in the blood of urea–N and the other non-protein N-substances. The former can be estimated with a 3 c.c. quantity of blood sufficiently accurately and without a profound knowledge of chemical technique.[2] The principle of the method depends on the fact that the soya bean contains a specific enzyme (urease) which converts urea quantitatively into ammonium carbonate, but has no effect on any other nitrogenous constituent. There is general agreement that an estimation of the blood urea-N is a satisfactory index of the functional power of the kidney. This estimation has a practical application in conditions of nephritis, cardio-renal disease, and in genito-urinary surgery. Gettler emphasises the fact that the blood analysis should be considered as an adjunct to the clinical investigation. Even so, when all the clinical and laboratory evidence may point to a certain form of nephritis, the post-mortem examination will not necessarily be in agreement with the diagnosis made during life.

In acute nephritis figures of 20 to 40 mgs. indicate that the power to excrete nitrogenous waste is undamaged, while if the figures are high, 100 mgs. or more, the prognosis is serious if this high level remains or tends to increase. Such retention occurs also in cardio-renal disease. Widal, Weill and Vallery-Radot[3] state that subjects with urea-N reaching 100 mgs. without remissions almost always die within two years; moreover, such a figure is indicative of a terminal phase. They note that patients with a figure of 50 to 100 mgs. may not undergo any notable deterioration, but they regard the finding as a valuable warning indication. O'Hare in two cases noted a blood urea figure of 59 mgs. and 50 mgs. respectively, with death three and five years later. The autopsy showed advanced arterio-sclerotic changes in the kidneys.

In the renal deficiency associated with back-pressure effects in prostatic enlargement a figure above 30 mgs. indicates a definite degree of operative risk. Preliminary cystotomy in a favourable case causes a fall in the figure (Dobson[4]).

Myers and Killian[5] consider the blood creatinin figures furnish a more reliable prognosis than any other test. They base their conclusion on an examination of 85 cases who had over 5 mgs. creatinin (some as high as 33.3 mgs.); 80 of the cases died within a few months of the observation. At the same time blood urea-N was estimated, and it is clearly shown

that disturbances in the blood urea-N content occur at an earlier stage than in the creatinin-N content. Folin showed that this substance is endogenous, the amount excreted from day to day being a constant for the individual. It can be considered as an index of the amount of active protoplasmic tissue, a great increase meaning a serious impairment of renal tissue.

The chemistry of the blood proteins becomes of very great clinical importance in view of Epstein's work. Although there are sharp differences of opinion as to the correct interpretation of the findings and also as to the correctness of the findings, the practical application of the theory in Epstein's diet in chronic nephritis with œdema has met with success. The normal figures given for the protein content of the serum are 6.5 to 8.5 grm. per 100 c.c. of blood; of this the globulin fraction does not normally exceed 35 per cent., the cholesterol content is 200 mgs. Epstein[6] considers that the œdema in chronic degenerative tubular nephritis is largely due to a disturbance of the blood protein percentage with corresponding alteration of the albumin-globulin ratio and an increase in the amount of lipoids. In an illustrative case the analysis showed protein 4.38 gms., globulin 3.2 gms. or 75.5 per cent. of the protein, cholesterol 840 mgs. Stated briefly, the theory is that the cause of the œdema is the decreased osmotic pressure of the blood resulting from the diminution of the protein content of the blood serum, a condition directly due to the steady loss of large quantities of albumen in the urine. The altered condition of the blood serum and the consequent reduced osmotic pressure favours the absorption and retention of fluid by the tissues. Hence the great œdema and oliguria. It is to be understood that Epstein in no way disputes the factor of deficient chloride elimination as a cause of œdema in chronic diffuse nephritis. The Epstein diet is designed to increase the protein content of th serum, and thus to restore the osmotic pressure of the blood and remove the excessive lipoids.

A further observation of interest is that the œdema fluid has a quite distinctive analysis.* It consists chiefly of water, salt and non-protein nitrogenous substances present in a concentration similar to that found in the blood, with a small amount of protein.

Whatever be the correct explanation of the above facts,

* In one case quoted œdema fluid gave :—

	Fluid.	Blood.
Non-protein N	122	114
Urea-N	84	60
Uric Acid	3.5	2.5
Creatinin	4.5	2.1

alterations in the dietary based on such findings cause a general improvement and a disappearance of the œdema in some cases. MacLean considers that the increase in the urea content of the blood following on the high protein diet is the cause of the improved renal function, *i.e.* the increased diuresis. Acting on this supposition, MacLean and Russell gave 30 gms. or more of urea daily with undoubted benefit to cases of parenchymatous nephritis with œdema and ascites, maintaining the administration for several weeks when necessary.

Epstein remarks that the increased diuresis must occur via the blood, and that the observed increase in the urea is to be held responsible for the diuresis is undoubtedly a misinterpretation of facts. It is more likely, he considers, that the increased concentration of the urea is the result of a temporary accumulation of this substance in the blood caused by the passage of the œdema fluid from the tissues to the kidneys.

Kahn,[7] on the other hand, examined many different types of kidney disease with a view to verifying the statement that the albumin-globulin ratio is disturbed. He found that the normal ratio 1.5 or 2 : 1 remained practically unchanged both under ordinary conditions and when the patient is fed on a high protein diet.

Gettler and St. George[9] consider that in diabetes the estimation of the blood sugar is more important than that of the urinary sugar; they state, moreover, that hyperglycæmia can be detected a long time before sugar appears in the urine. The blood analysis figures can, as is known, be influenced by diet and more especially in the case of the carbohydrate element. Hyperglycæmia was present in some fifty cases of carbuncles and furunculosis of severe grade. The conditions improved rapidly when the patients were placed on a diet poor in carbohydrate.

* * * * *

Gastric Function.—The fractional analysis of the Boas test-meal, introduced by Rehfuss and his co-workers in 1914, has added greatly to our knowledge of the vagaries of gastric secretion and motility in disorders of the stomach. Hitherto most of the facts known have been elicited by the employment of the test-meal of Ewald examined at an interval of an hour later. Correct figures are obtained if the removal of such a specimen is assisted by the employment of Senoran's aspirator. But as is easily demonstrable by the fractional method, a chance sample at the end of an hour may give a result approximately the same in several types of secretory behaviour with varying diagnoses. The estimation of the acidity at quarter-hourly intervals gives a much truer picture of the actual conditions.

There are further obvious advantages. We obtain a knowledge of the amount and character of the resting juice, macroscopic inspection for bile, mucus and blood is possible, and lastly we learn the rate of emptying.

Ryle and Bennett[10] working with a gruel test-meal have established normal standards—results based on the investigation of one hundred healthy medical students. The normal resting juice shows wide variations in amount. Figures above 50 c.c. are unusual, fully 10 per cent. of normals show no resting juice. The free acidity with Töpfer's reagent as indicator varies between 0 and 20. Rehfuss and Hawk give much higher figures with an average of 52 c.c., total acidity 30 and free acidity 18. Bile is present in more than 50 per cent. and trypsin in practically all specimens.

At least four types of normal curves can be recognised: (1) An average normal group (75 per cent.), total acidity rising to 30 (.109 per cent. HCl), emptying in 2½ hours; (2) hyperchlorhydria (12 per cent.), acidity rising to 70 (.255 per cent. HCl); (3) hypochlorhydria and achlorhydria (10 to 12 per cent.); (4) rapid emptying in about an hour, with average acidity.

In the investigation of unselected cases of dyspepsia the most striking differences are seen in an increase in number of "hyposecretory" curves—about 25 per cent., and of these about one-third show complete achlorhydria throughout the cycle of gastric digestion. In about 30–35 per cent. there was definite hypersecretion. In 30–40 per cent. the readings fell within normal limits, though the curves might show abnormal characters.

The clinical associations of these two conditions are of interest. Apart from the traditional finding of absence of free hydrochloric in carcinoma of stomach and pernicious anæmia achlorhydria or marked hypochlorhydria has been very constantly demonstrated in cases of acne rosacea.

Barber obtained strikingly successful results in this disorder by giving acid hydrochloric dil. B.P. in doses of 30 minims and upwards with meals. Of twelve of these cases investigated by the fractional test meal there was complete achlorhydria or an extreme degree of hypochlorhydria in seven and a delayed rise in acidity in one.

The hypersecretory curve[11] was obtained in most instances from patients with history, symptoms and sometimes X-ray findings pointing to a diagnosis of duodenal or pyloric ulcer. Similar curves have, however, been obtained where the above conditions were not suspected.

One other observation is of considerable importance. Definitely proven cases of lesser curvature ulcer have shown

normal or hyposecretory types of curve and in a few instances almost complete achlorhydria.

The chief points of the hypersecretory curve can be summarised as follows: a copious clear resting secretion, 60 to 100 c.c. or more of a high acidity (50 to 80); a steadily ascending acidity, average 73, the summit of the curve coinciding with emptying; the rate of emptying between two and two and three-quarter hours.

A smaller group showed "duodenal hurry," emptying in three-quarters to one and a half hours.

Rehfuss and Hawk, [12, 13] from a study of 842 normals, bring forward certain facts and considerations which enable one to realise the undesirability of assigning to any given secretory curve a pathological interpretation without a very full understanding of the normal secretory and motor response. They recognise three normal secretory responses, hypersecretion (40 per cent.), isosecretion (30 per cent.) and hyposecretion (30 per cent.); similarly three motor responses, fast, normal and slow. The digestive phase is made up of (1) the psychic secretion, total acidity 97.6 (0.35 per cent.), (2) the chemical secretion.

The latter begins very early in digestion; it is more persistent than the former, lasting throughout digestion and frequently continuing after the stomach is empty. In health the quantity secreted with a mixed meal is over 200 c.c. The type of meal used for the test influences the secretory response. With foods, notably meat and fish, acidities over 100 were quite common (42 per cent.); for meat the average figure for total acidity was 120, for eggs 80, and for vegetables 70. Defining the normal acidity as 70 to 80 (0.25 per cent. to 0.28 per cent.), they found that this figure was exceeded in 40 per cent. of normals.

While recognising "hyperacidity" as a definite clinical entity, they point out that a demonstrable titratable acidity does not of necessity exist. In fact, in some patients with definite symptoms relieved by alkalies hypoacidity was present. On the other hand, no acid figures found in disease have exceeded the figures which obtain sometimes in health. It seems clear that the line of demarcation between the end of normal findings and the beginning of pathological manifestations is exceedingly difficult to define. The figures given for ulcer are in general agreement with the findings of the English workers—38 per cent. showed hyperacidity and 30 per cent. low acidities.

Criticism of the fractional test is directed mainly against the chemical methods employed in the analysis. Manifestly it is impossible to make a complete analysis of twelve specimens. The advocates of the detailed examination of the chlorides point out the necessity in gastric analysis of ascertaining the

amount of mineral chlorides. It is established that a characteristic finding in gastric carcinoma is the relative increase of the mineral chlorides. This also occurs when for any reason there is regurgitation of intestinal contents into the stomach, the physiologically active hydrochloric acid being neutralised in part and sodium chloride formed. The conditions under which this occurs are stated to be chronic gastric ulcer, duodenal ulcer, gall-stones, and of course gastro-enterostomy.

All observers, however, agree that either method should be supplemental to a detailed clinical examination. The fractional meal gives very definite information in cases of pyloric stenosis, whether due to carcinoma or ulcer, as does the one-hour test. The study of the cases should be completed by an examination of the fæces for occult blood.

The method offers wide possibilities for physiological research as to the effects of the emotions, action of drugs, gastric secretion, and motility in health and disease.

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CECIL CLARKE.

SURGERY.

The **treatment of retention of urine in paraplegic patients** is of great importance, for a fatal infection of the urinary tract is a frequent complication of cord injuries. There is no doubt that the former method of treating these cases by catheterism was mainly responsible for the introduction of the organisms which caused such disastrous results.

The subject is discussed[1] by Dr. V. C. David, who established various experimental conditions in dogs in order to study the relation of infection in the urinary tract to cord lesions. His summary of the different methods of treatment is as follows: (1) Catheterism sooner or later causes cystitis, with subsequent ascending infection of the urinary tract. (2) The emptying of the distended bladder by manual expression is a safe method of procedure, as the dangers of

catheterism are avoided. On the other hand, the bladder is not completely emptied by this procedure, and the residual urine may become infected from the blood stream. (3) The periodic automatic expulsion of urine by reflex action is an ideal condition, but unfortunately the automatic bladder emptying does not begin until about the twenty-fifth day after injury, and only then under favourable conditions, such as the absence of cystitis. It appears that this automatic action of the bladder is best established by the regular use of the catheter, but this involves the risks to which reference has already been made. (4) Continuous drainage of the bladder by a retained catheter or supra-pubic cystostomy. The former is impracticable owing to the difficulty of maintenance and the trophic disturbance likely to result from pressure on the neck of the bladder and in the urethra. Cystostomy is associated with an absence of residual urine, and prevents dilatation of the bladder, but has the disadvantages of the necessity of operative interference, increased difficulty of nursing, and the certainty of bladder infection.

In estimating the value of these different methods of treatment Dr. David considers that in early cases where there is no urinary infection catheterism is absolutely contra-indicated, and that the distended bladder should be relieved by manual expression of the urine. If this is successful it may later on lead to the establishment of the periodic automatic emptying of the bladder, which may, however, ultimately be established in cases in which manual expression fails.

As long as infection of the urinary tract does not occur manual expression of the urine or periodic reflex urination should be favoured indefinitely. If infection of the residual urine takes place supra-pubic cystostomy and constant drainage of the bladder by siphonage is the procedure to be employed.

* * * * *

Carcinoma of the Prostate is considered[2] by Dr. H. C. Bumpus largely from the point of view of the occurrence of metastasis. Very few cases of metastasis from a primary prostatic growth have been reported, but its occurrence is of considerable importance, especially in association with the customary treatment of malignant disease of the prostate by means of radium. That it may be present without giving rise to obvious symptoms, and when the prostate gland is not necessarily enlarged to any marked degree, are facts which Dr. Bumpus specially emphasises, because the results and deductions reported of any form of therapy in prostatic carcinoma are apt to be misleading unless the presence of metastasis has been excluded by means of skiagraphy and neurological

examination. His remarks are based on a study of 362 cases of carcinoma of the prostate observed at the Mayo Clinic from 1914 to 1919 inclusive. Of these 79 (21 per cent.) showed evidence of metastasis.

Cancer of the prostate may be primary in the gland, but more frequently it is associated with simple hyperplasia. Two obvious clinical types are described, but many intermediate types occur. In the first type there are few local symptoms, and the gland is only slightly enlarged, with a uniform contour and an absence, generally, of the characteristic hard areas. It is apt to be confused with a simple hypertrophy, but it is wanting in the elasticity which is felt in a simple enlargement. The gland is never so large that it cannot be completely outlined by digital examination. In these cases it not infrequently happens that the occurrence of metastasis leads to the discovery of the primary disease. In the second and more common type the gland may present any degree of enlargement, but the contour is always felt to be irregular and the surface is elevated by areas of stony hardness. Later on these areas coalesce, and the entire gland then feels irregular and very hard.

Metastasis was found in the bones of 41 of the patients who were X-rayed, representing 51 per cent. of the 79 patients with metastasis and 30.3 per cent. of the 135 patients who were examined by X-rays. The pelvis, spine and femur are the most common sites of metastasis in bone.

It is noteworthy that macroscopic hæmaturia and retention of urine as first symptoms were found to be very uncommon in these cases, especially in those associated with metastasis. In the later stages retention occurs in 25 per cent. of the cases with metastasis, and in 33.9 per cent. of the cases without metastasis. The author's conclusions are as follows: (1) Metastasis occurs in the glands more frequently in cases of carcinoma of the prostate than is demonstrable clinically because of the inaccessibility of the glands first involved. (2) Two distinct types of carcinoma of the prostate are distinguishable. (3) The smaller type gives clinical and microscopic evidence of greater malignancy. (4) The larger type tends to remain localised, resulting in more urinary symptoms and producing metastasis later in the disease than the smaller clinical type. (5) The larger clinical type is more amenable to radium therapy because of its lesser potentiality of malignancy. (6) One-third of the patients with carcinoma of the prostate have osseous metastasis demonstrable by X-rays. (7) The pelvis and spine are the most frequent sites of osseous metastasis. (8) Metastasis rarely occurs in the lungs, and probably never without involvement elsewhere. (9) Metastasis in the spinal cord closely simulates primary cord tumours, and often

occurs when the cancerous prostate is but slightly enlarged. (10) Pain is absent in one-fourth of all cases with metastasis. (11) Urinary symptoms are absent in 11.5 per cent. of all cases with metastasis. (12) Neuralgic and rheumatic pains in men above middle age, even in the absence of urinary symptoms, should suggest the possibility of carcinoma of the prostate.

* * * * *

The treatment of perforating gastric and duodenal ulcers by cœliotomy and suture of the opening is agreed upon by all; but the question as to whether this simple operation should be immediately followed by a gastro-enterostomy or not has been fiercely debated. On the one hand we have those who consider that suture alone is sufficient, and on the other hand we have those who deny that this is so, and insist on the desirability of performing a gastro-enterostomy in all cases where the general condition of the patient is good enough for the purpose. The conservative view is well expressed by Dr. C. F. Farr,[3] who points out that in spite of the argument for gastro-enterostomy that it aids the healing of the ulcer and obviates a later operation for stenosis, it is well known that by far the greater number of perforating ulcers heal well after suture and that hemorrhage and stenosis are exceptional sequelæ.

He considers that the strongest arguments against the added operation are: (1) There is an additional immediate mortality; (2) the end-results of gastro-enterostomy are not 100 per cent. good. It seems wiser to perform only the simple life-saving operation and await the result, and undertake a gastro-enterostomy later on for the small number of cases requiring it.

The other point of view is expressed by Dr. R. Lewisohn,[4] who maintains that it is not uncommon for pyloric and duodenal ulcers to persist after simple suture of an acute perforation. His conclusions are: (1) Immediate gastro-enterostomy in the treatment of perforation does not increase the mortality. (2) Gastro-enterostomy and pyloric exclusion simplify the post-operative treatment. (3) Gastro-enterostomy will guarantee proper drainage of the stomach contents and overcome partial obstruction of the pylorus caused by post-operative adhesions. (4) Closure of the perforation, gastro-enterostomy, and pyloric exclusion should be the method of choice. Simple closure of the perforation should be reserved for those patients whose general condition is so poor that even a rapidly performed gastro-enterostomy would be too much of an operative risk.

So much depends upon the judgment and operative ability of the individual surgeon that it is a difficult matter to decide upon this vexed question. The accumulation in the future of more evidence from the accurate case histories of the two

methods of procedure may allow of a just conclusion; but meanwhile it seems desirable that at least surgeons of limited experience should be content with simple suture, which saves the patient from the possibility of a mistake as to his powers of sustaining a more prolonged operation.

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JAMES SWAIN.

GYNÆCOLOGY.

Incurable Carcinoma of the Cervix Uteri occurs so frequently in middle-aged and elderly women, and causes so much distress not only to the patients but also to others, that it is not surprising that an immense amount of thought and experiment has been devoted to its alleviation. The combination of a large ulcerated surface with a copious discharge of a most offensive nature renders some form of local treatment essential, but local applications, such as iodoform, are practically useless. It is therefore in operative methods, and especially in electrotherapeutics, that recent advances have been made.

Total removal of the uterus and upper third of the vagina by Wertheim's method is now not so freely performed as a palliative operation, although it was at one time much advocated. The local recurrences were few, but the high primary mortality, averaging about 18 per cent. of all cases curable and incurable, has caused this operation to be confined mainly to cases in which there is a fair chance of cure. In dealing with this type of case any operation which is likely to effect a permanent cure is quite justifiable, but when the patient is inevitably doomed a treatment which will give the maximum of comfort with the minimum of risk is to be preferred.

Local removal with a sharp curette and treatment of the stump or shell of cervix and uterus with zinc chloride or 10 per cent. formalin is still the usual procedure. It is very efficacious for a time. The patient rapidly recovers from the slight disturbances of the operation, and local symptoms usually do not reappear for several months. The more fortunate patients die from secondary deposits or uræmic conditions before the pain, sloughing and fœtor re-commence, but the majority die a lingering death with much pain and discomfort.

Diathermy has given good results in the treatment of cervical carcinoma. The vaginal vault and cervix are ideal situations

for its application, and the benefits are great and lasting. The local growth is removed as far as possible with a sharp spoon or curette, and the whole surface thus exposed is treated with a broad diathermy applicator until bubbles appear. No portion of the raw surface should be allowed to escape.

Great care is necessary to avoid involving the bladder or rectum in the area affected by the cauterisation, or a fistula connecting the vagina with one or other of these organs will result and the patient's condition be rendered more miserable.

The slough should separate between the seventh and eleventh days, and come away cleanly without any foul discharge. It is at this stage that the real danger of the treatment becomes manifest. Secondary hemorrhage of the most alarming severity often occurs. This can usually be controlled by firm packing, but in cases where the uterine artery has been involved in the slough hemorrhage has proved fatal. Two such cases have been reported by Corscaden.[1] Involvement of the ureter in the slough has been reported on one occasion. Apart from these accidents the results are excellent. Pain disappears at once, the raw area commences to scar over and contract, the discharge and fœtor practically cease, and marked improvement takes place in the general condition of the patient. Local recurrence is long delayed, giving welcome respite to the patient.

Radium treatment has also been employed in inoperable carcinoma of the cervix. Betrin[2] reports good results at the Geneva Clinic using 60 mgs. in lead filters 2 mm. thick. Chapuis[3] uses 150 mgs., placing it both inside the cervix and in the vaginal vault. Both these observers consider asepsis of the vagina essential, and both deprecate preliminary curettage. They insist upon the necessity of adequate filtration by lead or brass capsules 1.5 mm. thick enclosed in rubber envelopes. Protection of the rectum is essential, or troublesome diarrhœa supervenes.

Percy's Cold Cautery is recommended as an ideal method of treatment, but requires an elaborate technique. Percival Cole[4] has recently reported a series of 43 cases with the following results: an average duration of 16 months with complete relief of symptoms in all cases save 8, which died within 3½ months; four cases lived for 2 years and one for 3 years and 2 months. The operation is performed in two stages.

(*a*) Intra-abdominal. All the intestines are pushed into the upper abdomen after freeing any adhesions, and are packed away from the pelvic cavity with hot cloths. The internal iliac and ovarian vessels are then tied on both sides.

(*b*) The vaginal operation. This is immediately proceeded with through a special water-cooled speculum, and the cautery

is guided into position by the assistant's hand in the abdominal cavity. The whole interior of the uterus, the cervix and the bases of the broad ligament are then " cooked " till all the carcinomatous area has been attacked. The abdomen is then closed, the operation lasting about 1½ hours. Secondary hemorrhage is rare, and if it occurs is slight in amount. Vesico-vaginal fistula is the commonest complication, 7 cases in 43. Two fatal cases are reported from the Johns Hopkins Hospital[5] and one by Bancroft.[6] The operation mortality compares favourably with any other method of treatment, while the patient's comfort and expectation of life are greatly improved. Cole[4] advocates the use of radium in conjunction with this method, and points out that it should not be used in local recurrences after panhysterectomy owing to the proximity of the bladder.

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R. S. S. STATHAM.

Reviews of Books.

Functional Mental Illnesses, and the interdependence of the Sympathetic and Central Nervous Systems in relation to the Psycho-neuroses. By R. G. ROWS, M.D., and DAVID ORR, M.D. Pp. 63. Edinburgh: Oliver and Boyd. 1920. Price 3s. 6d. These two papers, reprinted from the *Edinburgh Medical Journal*, will be read with interest by a wider circle of medical readers than might at first sight be suggested by the title under which they are published.

For whilst the centre of their subject is the inter-relationship between the emotions, the glands of internal secretion and the sympathetic system, their purport is a plea for the consideration of the sick man as a whole, and especially an insistence that " the whole nervous system, central and vegetative, constitutes one physiological unity," and that " the tone and excitability of the whole sympathetic system is regulated by the gland secretions or hormones which are poured into the blood. . . ."

The young general practitioner *au courant* with recent physiology equally with the matured of clinical experience and

ripe for reflexion will find these papers stimulating. The general physician, the physiologist, the pathologist, the psychotherapist and the alienist will read them with interest and find food for thought therein.

The important work of Professor Pavlov on the conditioned reflex is dealt with at some length (pp. 17–20), and further elucidated by clinical illustrations in the second lecture; but the very suggestive relationship between this knowledge and the treatment of "functional fits" does not receive the author's consideration.

The principle of "facilitation"—habit—is interestingly dealt with and illustrated with clinical examples.

The absence of definitions in the lectures of Dr. Rows must be conceded to be a defect, especially of "consciousness."

Concluding his lectures, Dr. Rows observes, "The type of result produced will depend not only on the suggestion adopted but also on the mental tendencies the patient has developed from the time of birth onwards, and on the sensibility and reactivity of his nervous mechanisms," and deplores the obscurity cast over the study of "functional mental illnesses" by concentrating upon the symptomatology of secondary phenomena.

It is not clear why dementia præcox should have been singled out from a long list of such phenomena for the attachment of the epithet "so-called."

Two interesting lectures, perhaps a little prematurely dogmatic in a few places, end with a plea for early treatment to prevent the appearance of the secondary phenomena which form the symptoms of a psychosis.

Dr. Orr's attitude is well illustrated by the concluding paragraph of his paper: "We must take a much broader view of the etiology and development of the psycho-neuroses than we have done hitherto. We can no longer regard them as psychic disturbances in the manner and sense employed in the past, and must be prepared in future to attach less importance to the 'psyche' and approach the problem much more from the physiological side, as the inter-action of the 'psyche' and the endocrino-sympathetic system under emotion is so very obvious" (p. 63).

There is a certain hardiness in "the determination of individual reactivity to an exciting cause, or in other words, temperament" (p. 58), but it is at any rate simple and straightforward.

Again, one feels that a definition of "consciousness" is needed that the reader may apprehend. "It must be granted that the will and consciousness have normally no influence on the vegetative system."

With these few points of criticism Dr. Orr's paper is clear and vigorous and maintains the reader's interest throughout.

The two papers are complementary, and this brochure (of 63 well-printed pages) forms a contribution to medical literature which should stimulate the thought and work both of clinicians and those engaged in research in a number of diverse fields of medicine.

Malaria at Home and Abroad. By Lieut.-Col. S. P. JAMES, M.D., D.P.H. (I.M.S., retired). Illustrated. Pp. xi., 234. London: John Bale, Sons & Danielsson Ltd. 1920. Price 25s. net.—The author's large experience as an administrator and teacher is a sufficient guarantee of the value of this attractive and well-illustrated book. Sir Patrick Manson when asked to write a "Foreword" said, "It requires no foreword from me or anyone else, it speaks for itself."

The book, while not pretending to be a complete treatise, is remarkably full of practical detail, and there is not a page in it which does not contribute in some way to the practical problems of the cure, control and eradication of the disease. This, we think, will be the reason of the strong appeal it will certainly make to medical men, whether their practice lies in the tropics or at home. Colonel James gives an interesting account of recent malarial outbreaks in England, and the measures to be adopted to cope with them. There is an excellent clinical section in which the varieties of the disease as observed at various ages and in various degrees of severity are described. Diagnosis and treatment are adequately dealt with, an important point, considering how much space is necessarily given to preventive methods. We note with much approval the emphasis which the author lays upon the necessity for microscopical work in connection with malaria, and the importance of thorough training and experience in this branch of investigation for all who intend to practise in the tropics. The book is well written, well illustrated and well got up, and deserves to become exceedingly popular with students and practitioners alike.

A Text-Book of Pharmacology and Medical Treatment for Nurses. By J. M. FORTESCUE-BRICKDALE, M.A., M.D. Pp. xv., 392. London: Oxford Medical Publications. 1920. Price 25s. net.—The author of any elementary text-book has many difficulties to contend with, and not the least of these is that of combining clearness of expression with accuracy of fundamental facts.

Many writers succeed quite well in making their subject easy to understand, but unfortunately the truth of their statements is often open to question. Dr. Brickdale, whose death has left the profession poorer in the domain of letters as well as of

science, put his book forth in the plain, straightforward way that gave his writings such charm, while at the same time he spared no pains to ensure that facts were not misstated.

It is no easy task to write a book on pharmacology and treatment which is intended to be read by those who are well versed in the elements of chemistry and physiology, but in the present case the difficulty is enhanced, since nurses have seldom had the opportunity of acquiring much knowledge of these subjects. Nevertheless, the section dealing with chemistry is very clear, and should be readily understood by beginners; modern ideas are well brought forward, and the theory of ionization is dealt with in a simple and accurate manner. Even the very young science of colloidal chemistry receives some attention.

The section on pharmacology is illustrated by well-selected diagrams, and is thoroughly up to date, endocrinology and serology being dealt with in an admirable manner.

That part of the book devoted to treatment deals fully with general principles and also in greater detail with the methods adopted in treating a number of carefully-selected diseases.

Altogether we consider that the book well maintains the high standard of the series to which it belongs, and we commend it to those nurses who wish to excel in their profession.

Anatomy: Descriptive and Applied. By HENRY GRAY. Twenty-first Edition. Edited by ROBERT HOWDEN, M.A., M.B., D.Sc. Pp. xvi., 1,366. London: Longmans, Green and Co., 1920.—Although in the past decade the descriptive story of the pure anatomy of the dissecting room has changed but little, yet this edition is a great advance in the manner of its presentation and appeal to the student.

In the early pages of the book there is an up-to-date description of our advancing knowledge of human embryology, which offers a more and more enchanting and illuminating peep behind the ante-natal construction hoardings of man. In this chapter is revealed his primitive origin, and atavistic traits are explained.

The authors evidently realise that illustrations crystallise the information provided by the text, and diagrams are the keynote to the improvements of the last ten years.

In the chapter on joints the comparison of the relation between epiphyseal lines and the attachment of capsular ligaments is particularly commendable, also the extra-articular situation of the cruciate ligaments of the knee-joint. Very clear are the diagrams of the cardiac neuro-muscular mechanism.

The supremely complex connections of the ganglia of the autonomic nervous system with the cranial nerves are quite

easily followed, thanks to numerous and lucid schemes of the nerve paths.

The book concludes with a collection of the surface markings of the whole body very clearly pictured, thus completing a work which is a triumph of precise science and pleasing draughtsmanship, and likely to preserve its premier position as a manual of Anatomy.

A lonely erratum appears on page 26, line 13, where apparently the printing of ulna instead of tibia has escaped notice.

A Dictionary of Treatment, including Medical and Surgical Therapeutics. By SIR WILLIAM WHITLA, M.A., M.D., LL.D., M.P. Sixth Edition. Pp. viii., 1,083. London: Baillière, Tindall and Cox. 1920. Price 25s. net.—A revised edition of this favourite work will be heartily welcomed, and the strain of Parliamentary duties has not prevented the indefatigable author from carrying out active revision.

The surgical articles have been entrusted to Mr. S. T. Irwin, the ophthalmological to Wiclif McCready, and the gynæcological to R. J. Johnstone, and an enormous amount of information has been collected in the thousand large pages of this edition. A curious misprint occurs in the article on pneumonia, where 12 c.c. of a 1 in 5 solution of camphor are spoken of as a hypodermic dose. We could wish that a full account of the fasting treatment of diabetes were given and the Epstein diet in tubal nephritis; but one is astonished at the number of useful methods which are included. Sir William's criticism and discussion of various modes of treatment is not the least valuable part of the book.

The Diagnosis of Nervous Diseases. By SIR JAMES PURVES STEWART, K.C.M.G., C.B. Pp. viii., 584. Illustrated. London: Edward Arnold. 1920. Fifth Edition. Price 30s. net.—It is unnecessary to lay stress on the usefulness and value of this well-known work, or to point out the features which are so well known to a large circle of readers.

The fifth edition has been revised and in part re-written, so that while those who have not yet availed themselves of the knowledge and experience stored in previous editions may be confidently recommended to begin on this one, those who have valued the book in the past will find that the present volume supplies them with that residuum of recent information which they need, and should certainly not miss the opportunity of acquiring. Quite apart from the value of the text, the excellent way in which the book is produced and the numerous coloured plates and illustrations make it a remarkably cheap volume at the price.

Infectious Diseases. By CLAUDE BUCHANAN KER, M.D., F.R.C.P. Ed. Second Edition. Pp. xii., 625. Oxford Medical Publications. 1920.—This is an excellent book, which deals with the problem of the infectious diseases in a thoroughly practical manner. The main outstanding features of the work are the methods of diagnosis, prognosis and treatment, each of these being considered in complete detail. The wide personal experience of the author is of the greatest value. The practitioner will therefore find this book an invaluable help with regard to the detailed management of cases. Pathology occupies a relatively subsidiary position. Owing to the large amount of fresh knowledge which has been acquired since the appearance of the first edition, several portions of the book have been entirely re-written and there are numerous alterations and additions. The illustrations, many of which are coloured, demonstrate remarkably clearly the details desired. There are also very numerous charts. The last chapter is devoted to the problems of Fever Hospital Management.

Essentials of Tropical Medicine. By WALTER E. MASTERS, M.D. Pp. vii., 702. London: John Bale, Sons and Danielsson, Ltd. 1920. Price 42s. net.—To those preparing for examinations and to the busy tropical practitioner the author has rendered a distinct service in compiling a synopsis of the salient facts of Tropical Medicine. The first four sections devoted to Tropical Medicines proper are classified according to etiology; the remainder to such diverse subjects as Venoms and Poisons, diseases of the Skin and Eyes, Tropical Hygiene. That such a book should comprise 700 pages is of itself witness to the enormous increase in our knowledge of this special branch of medicine. The use of large type, generously spaced, makes the volume bulky. An excellent feature is the summary of the historical facts in dealing with the more important diseases. The details of treatment and prophylaxis are given very fully. It is manifestly difficult to epitomise the salient features of differential diagnosis in a line. This is often attempted by the author under the heading of diagnosis, and in our opinion it leads him in several instances to make positive misstatements. Later, on page 606, we read that "in lymphatic leukæmia . . . the leucocytes are increased to 14,000 per cm."; "in splenomedullary leukæmia the red cells are reduced to 700,000 per cm."!

Functional Nerve Disease. Edited by H. CRICHTON MILLER, M.A., M.D. Pp. xi., 208. London: Oxford Medical Publications. 1920. Price 8s. 6d. net.—This little volume of essays by different writers is an attempt to set forth the new psychogenetic concept of functional nervous disorders as it

has been revealed to us during the war, so that the users may find application to problems of peace time. To write a text book of the subject is as yet beyond the wit of man; first, because the field to be covered is so vast and so little explored; and second, because it is almost impossible to write of these psychological processes without falling into a slang which is as distressing to the eye as it is perplexing to the intellect. The writers of these essays have not quite avoided the use of this jargon, but they are obviously doing their best to be intelligible, and they have succeeded far better than most of those who write on such subjects. The lessons which the book teaches enter into every branch of medicine, and are destined to effect a revolution in practice at least as profound as the discovery of anæsthesia. We wish the book the wide circulation which it deserves.

An Atlas of the Primary and Cutaneous Lesions of Acquired Syphilis in the Male. By CHARLES F. WHITE, M.B. and W. HERBERT BROWN, M.D. Pp. vii., 32. 35 Plates. London: John Bale, Sons and Danielsson, Ltd. 1920. Price 27s. 6d. net.—This Atlas comes at a time when venereal diseases are occupying a large amount of attention in the medical as well as the civilian world. With many excellent photographs (some stereoscopic), and a number of beautifully-coloured drawings of the various venereal lesions, it gives a good representation of the different forms these infections may take, and should certainly assist materially students and practitioners in diagnosis. The plates are prepared by a skilled artist from cases carefully selected from a very large quantity of clinical material, and should carry out the chief aim of the authors, viz. "to give assistance in early diagnosis." The chapter on Primary Syphilitic Sores is excellent, and this alone would recommend the Atlas to anyone specially interested in venereal disease, as well as to the student. The last chapter, on "Diseases not infrequently mistaken for Syphilis," might well be amplified, and it is to be hoped that future editions may be forthcoming in an enlarged form.

Air Sickness. By CRUCHET and MOULINIER. Translated by J. ROSSLYN EARP, M.A., M.R.C.S., Pp. xv., 96. London: John Bale, Sons and Danielsson, Ltd. 1920. Price 5s. net.—This interesting little essay is founded on certain observations made by the authors before the war and since somewhat simplified. They are disciples of Professor Pachon of Bordeaux, and have applied his celebrated oscillometer to the elucidation of the symptoms observed in airmen during and after their flight. Many charts showing maximal and minimal arterial pressure are given, and the authors attribute most of the

unpleasant, or even dangerous, symptoms to vasomotor changes. An interesting series of similar observations on athletics in other fields is given and the results compared with those found in flying men. The book will be read with advantage, therefore, by all who are interested in the physiological results of strenuous exercise and in tests for physical fitness generally. Dr. Pachon contributes a preface, and wing-commander Martin Flack an introduction to the English translation. It should be added that the translator has done his work adequately and pleasantly, though an occasional Gallicism crops up here and there.

The Doctor's Manual. By A. HERBERT HART, M.S. Pp. xv., 256. London: John Bale, Sons and Danielsson, Ltd. 1920. Fourth edition. Price 10s. 6d. net.—The fact that this is a fourth edition seems to indicate that the book finds interested readers. Probably the first sixty pages, containing a list of stock medicines for the dispensary, with certain useful hints and directions based on practical considerations, are the most appealing part of the book. Each mixture has a sort of pet name, denoted by capital letters, which are not initials in all cases (thus *Liquor Atropinæ Sulphatis* is called L.A.P.), and which seem to be as difficult to remember as the full names. A little more care might have been taken to avoid errors in the Latin words used, which are, moreover, freely mingled with English in the formulæ. Thus "Injectio Hypodermicæ" occurs in the Table of Contents, "Pigmentæ" on page 55, "Unguentum Tinea" on page 60, among other examples. The next 120 pages are devoted to proprietary drugs and foods and descriptions of spas and mineral waters. The style is reminiscent of much of the "Literature" on these subjects, which can usually be obtained free of cost. The remainder of the book contains a "Synopsis of Treatment," which does not differ materially from other similar attempts to condense a complicated subject into a few short paragraphs; and finally an article on Venereal Disease by Mr. Frank Kidd, whose portrait adorns the title-page.

A Medical Handbook, for the use of Practitioners and Students. By R. S. AITCHISON, M.D. Fifth edition. Pp. xvi., 390. London: Charles Griffin and Company, Ltd. 1920. Price 10s. 6d. net.—The first edition of this book appeared in 1893. The present is its fifth edition, which, according to the preface, has been carefully revised and brought up to date. That a hand-book embodying a close and balanced summary of the whole field of modern medicine can be written is demonstrated by this work; but the past twenty years have wrought such change in our view of disease that it seems almost impossible to bring a book first written in 1893 up to date without recasting its entire contents. Yet the author has

succeeded in compressing an enormous mass of information into a small compass and into a readable form, and it would hardly be fair to cavil at omissions.

The Bradshaw Lecture on the Surgery of the Heart. By SIR CHARLES A. BALLANCE, K.C.M.G., C.B., M.V.O., M.S. London. Pp. 154. London: Macmillan and Co., Ltd. 1920. Price 10s. 6d. net.—Apart from war wounds the knowledge of most surgeons of this subject is limited to the treatment of pericardial exudations, for as its author tells us, in the words of Guthrie, sensible people are not "disposed to stab each other while madmen try to kill themselves in a different way."

After referring to various ancient and modern views of the surgery of the heart, we are told that Farina sutured a wound in the left ventricle in 1886, and that the "first suture of a wound in the auricle was done in 1898 by Giordano." The author considers that the operation of paracentesis pericardii should be "banished from surgical practice," and would substitute exposure of the pericardium by removal of the sternal ends of the left sixth and seventh cartilages. In this he appears to have gone ahead of general opinion, and it is scarcely a fair comparison to instance the undesirability of puncturing the intestines in a case of obstruction in support of his contention. Paracentesis of the right auricle and ventricle is another matter, and those of us who have seen this done will agree with the remarks as to its dangerous character, and be content with free bleeding from the external jugular in such cases instead.

Quoting various statistics of heart wounds, it is shown that more than one-third get well after operation, whereas in the pre-operation period only 15 per cent. of cases recovered. The various operations are well described, and the book contains forty-eight illustrations. The opinions and work of other surgeons has been ably collected, and the lecture clearly presents to us practically all that is known of the operative possibilities of a region which has only comparatively recently been regarded as within the limits of legitimate surgery.

Operative Surgery. By ALEXIS THOMSON, F.R.C.S. Edin., and ALEXANDER MILES, F.R.C.S. Edin. Third edition. Pp. xviii., 619. London: Henry Frowde, Hodder and Stoughton. 1920. Price 16s. net.—This *Operative Surgery* is a companion volume to the author's *Manual of Surgery*. In the present edition the subject-matter has been largely re-written and expanded. The descriptions of operations are concise, and the illustrations appended are numerous and helpful. Minute technical details are beyond the scope of the work. We commend it as an excellent introduction to the practice of Operative Surgery and as an excellent text-book to use in preparing for ordinary surgical examinations.

Editorial Notes.

Solving the Financial Problem of our Voluntary Hospitals.

THE annual meetings of the Governors of the Bristol Royal Infirmary and Bristol General Hospital held in May adopted the new regulations recommended by the joint sub-committee of their General Committees, viz. that subscribers' notes should be abolished and that in-patients should contribute a maximum of one guinea a week towards the cost of their maintenance, provided their means allowed such a contribution to be made; from necessitous patients no contribution would be asked for. Furthermore, a contribution of sixpence per attendance would be collected from out-patients and some contribution sought from those who had to be treated by massage or in the electrical department.

Each of these Hospitals, moreover, resolved to institute an almoner under the jurisdiction of their House Committee.

One cannot allow the occasion to pass without placing on record the munificent gift of Mr. H. H. Wills, the President of the Bristol Royal Infirmary, in presenting securities to the value of £105,000 to this institution. That it helps very much towards meeting a serious difficulty is obvious, the gift so speaks for itself as to require no comment; but what is not obvious to those who have not been associated in this and other good work that Mr. Harry Wills puts his hand to is the devotion, time and energy he gives personally towards promoting the interests and the continued success of the Royal Infirmary.

* * * * *

Bristol Royal Infirmary's Honorary Medical Staff's Offer.

THE Medical Faculty of the Royal Infirmary made a definite offer to the Governors of the Royal Infirmary which it is well to place on record, as it indicates the desire of the Honorary Staff to perpetuate and promote the Voluntary Hospital system on the soundest basis possible :—

"In order to enable the Governors to bring into operation the proposals for the admission of paying patients, the Honorary Staff desire to offer their gratuitous services to all patients who are found, after inquiry by the almoner, to be unable to pay more than the cost of their maintenance. But in the case of patients whose payments are defrayed by public authorities or approved societies the Honorary Staff will attend and treat such patients in consideration of an agreed percentage of the gross payment received by the Royal Infirmary being allocated to and paid into a fund which shall be administered by the Honorary Staff."

* * * * *

The Hospital Almoners' Council Report.

THIS annual report brings home the valuable adjunct to the work of hospitals that is being furnished by the trained almoner. The Council emphasise the need for special training as well as a liberal education, and furthermore they lay stress on the innate sympathy and tactful disposition which are essential qualifications in those who are to engage in this responsible work. As regards the difficult question of patients' contributions, the Council's report is worth citing, being based on experience :—

"The point still unsolved is, how can the greatest sum be raised with the least suffering to the patients and without disturbing the old happy relationship which has existed

between the voluntary hospital and the community which it serves. There are two methods by which sums from this quarter can be raised. One is by the establishment of a fixed scale or flat rate of payment for in-patients and out-patients per week or per attendance according to age and sex. This method is advantageous in that it insures a clear estimate of the sum possible to raise. It involves a danger, however, in that it must give rise to a reluctance to attend a hospital on the part of those patients who can ill afford the fee until they are compelled to do so by the severity of their illness. There are also a number of patients attending voluntary hospitals who, although unable to pay the fees of a specialist and nursing home or even of a general practitioner for a long period of treatment, can well afford to pay a sum larger than the rate fixed by the hospital, which must necessarily be low in comparison to the cost of treatment. Under this system the majority of people will probably be prepared to pay the fixed scale, but a considerable minority will be either too poor to attend at all, or will be able to make payment only at the cost of foregoing some serious necessity of life, or they will be so well-to-do that they should contribute a much higher proportion to the cost of treatment. The second method is that of inviting voluntary contributions from patients according to their means through the direct medium of the almoner. To justify an almoner's department from a financial aspect is not altogether easy until it is realised that much of her work lies in the co-ordination of intelligent understanding with the science of healthy living. Many hospitals are finding the solution to the problem by creating such a department—not only to raise money justly and considerately, through genuine knowledge of social conditions, but also to relieve the cases of necessity which inquiry brings to light and so to complete and solidify the work of the hospital."

The constitution of an almoner at each of the Bristol voluntary hospitals is a great step towards protecting the subscribers from misuse of their donations, the poorer patient from being crowded out by the relatively well-to-do, and the medical staff from an unfair exploitation of their honorary services which the vast majority of the British workers would be the first to resent. But it seems a pity that the institution of a conjoint almoner department should have been postponed, the advantages of such a measure, which has nothing but advantage in its favour, has not yet been brought about. Common sense and economy will surely ensure amalgamation of the almoner departments in the near future.

* * * * *

Medical Postgraduate work in the University of Bristol.

THE series of weekly clinical demonstrations arranged by the Postgraduate Committee of the Clinical Board, which commenced on May 11th, have proved most successful. The number of practitioners who joined the course exceeds that of 1920, and the weekly attendance has been higher than on any previous occasion. Many of those attending have also joined as clinical assistants in various departments of hospital work, and it seems probable that this method of study will become increasingly popular. It may be remembered that a course of Clinical Pathology and Bacteriology was held in 1910 at Taunton, Frome, Dorchester, and other towns, and it has now been arranged. at the request of the local practitioners, to give a course of clinical lectures and demonstrations, in the ensuing autumn, at Trowbridge, a centre which will permit the attendance of medical men from all parts of Wiltshire. We believe that no other University has made the experiment of giving

postgraduate courses at country centres, and it is certain that the example set by Wiltshire will be watched with keen interest, and if successful copied by other districts. The increasing importance attached to postgraduate work is evidenced by the fact that a Committee of Inquiry has recently been appointed by the Ministry of Health to inquire into the need of postgraduate study both in London and the provinces. On March 11th the Chairman of the Bristol Committee attended in London and gave evidence on behalf of the University of Bristol.

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University of Bristol. Resignation of the Vice-Chancellor.

Sir Isambard Owen's resignation of the Vice-Chancellorship of our University has been received with very deep regret not only by the Council, Academic Staff and the Undergraduates of the University but by the Citizens of Bristol and a very wide circle in the neighbouring counties. Sir Isambard's leaving will be one unfortunate outcome of the new rules of the Treasury with regard to superannuation which could not be made for those whose energies and mental alacrity appear unabated at an age when most of us claim release from office involving such multifarious responsibilities. A distinguished physician and lecturer on Medicine at St. George's Hospital, London, he took a prominent part in the movement leading to the establishment of the University of Wales. He relinquished his hospital work and his practice in 1904 when he was appointed Principal of Armstrong College, Newcastle-upon-Tyne. In 1909 he became Vice-Chancellor of our University, and we have had the benefit of the experience he gained in University organisation at Durham. No one could have been more successful in the organisation of our new University, and his genial

bearing and dignified presence has drawn together the workers in every department of our University work and life. When the time of his departure from our midst arrives he will carry away the hearty good wishes of us all and the assurance that he and Lady Owen, who, like her distinguished husband, has endeared herself to the University, leave us with gratitude and admiration for their work here and with the hope that they have before them many years of useful work and of happiness in some different spheres of activity.

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J. M. Fortescue-Brickdale, M.A., M.D. Oxon., M.R.C.P.

Our obituary of Dr. J. M. Fortescue-Brickdale records the good work of our late colleague and of the loss sustained by the medical profession in his death in the prime of life.

The Editorial Committee of *The Bristol Medico-Chirurgical Journal*, profoundly conscious of the loss the medical profession has sustained by the death of Dr. J. M. Fortescue-Brickdale, record their appreciation of his services as Editorial Secretary since his appointment in January, 1913. His exceptional scientific and literary attainments and untiring devotion to the interests of the *Journal* contributed very materially to its success. We mourn with a deep sense of personal bereavement a colleague whose lovable disposition endeared him to us, and tender heartfelt sympathy to his widow and all the members of his family.

Adieu, beloved colleague. To have known you and worked with you was truly a privilege; simple words may convey, but cannot measure, all we feel in losing you.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in December.

April 30th, 1921.

Dr. D. A. Alexander (1)	1 volume.
L. M. Griffiths (2)	1 ,,
Dr. J. R. Kay-Mouat (3)	9 volumes.
Medical Research Council (4)	1 volume.
Sir Humphry Rolleston, K.C.B. (5)	1 ,,
Dr. J. E. Shaw (6)	3 volumes.
Dr. Shingleton Smith (7)	2 ,,

Unbound periodicals have been received from Mr. L. M. Griffiths, Mr. Hey Groves, Dr. James Swain and Mr. C. H. Walker.

THE ONE HUNDRED AND THIRD LIST OF BOOKS.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes were presented. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Bayliss, W. M. .. *Principles of General Physiology* .. 3rd Ed. 1920
Brockbank and A. Ramsbottom, E. M. *Clinical Examination of Lung Diseases* 1921
Cabot, R. C. .. *Differential Diagnosis.* Vol. II. 2nd Ed. 1919
Cannon, W. B. .. *Bodily changes in Pain, Hunger, etc.* .. (3) 1915
Catalogue (Index-) of the Library of the Surgeon-General's Office. 3rd ser., Vols. I., II. 1918–20
Clarke and E. E. Henderson, R. H. *Investigation of the Central Nervous System* 1920
Clubbe, C. P. B. .. *Intussusception* .. .. 2nd Ed. 1921
Crile, G. W. .. .. *A Physical Interpretation of Shock, Exhaustion and Restoration* 1921
Davis, H. .. .. *Skin Diseases in General Practice.* [2nd Ed.] 1921
Demoor, J. .. .. *Cours de Physiologie générale* .. .. (3) 1905
Emery, W. D. .. *Clinical Bacteriology and Hæmatology.* 6th Ed. 1921
Eve, Mrs. E. [Ed.] *Manual for Health Visitors* 1921
Ewart, E. D. .. *A Guide to Anatomy* 1921
Fuller, Sir B. .. *The Science of Ourselves* 1921
Gould, G. M. .. *A Pocket Medical Dictionary* .. .. 8th Ed. 1920

Grenfell, W. T. .. *A Labrador Doctor* .. .. (1) [N.D.]
Hartley, Sir R. D. Powell and P. H.-S. *Diseases of the Lungs and Pleuræ* .. .. 6th Ed. 1921
Hay, J. .. .. .. *Graphic Methods in Heart Disease* [2nd Ed.] 1921
Henderson, R. H. Clarke and E. E. *Investigation of the Central Nervous System* 1920
Horder, Sir T. .. *Medical Notes* 1921
Humphris, F. H. .. *Electro-therapeutics* .. .. 2nd Ed. 1921
Jansen, M. .. .. *On Bone transformation* 1920
„ .. .. *Feebleness of Growth and Congenital Dwarfism* 1921
Johnston, J. .. .. *Musa medica* .. .. (2) 1897
Lister, Lord .. .. *Six Papers by* (Notes by Sir R. J. Godlee) .. 1921
McLeod, J. J. R. .. *Physiology and Biochemistry in Modern Medicine* .. .. (6) 3rd Ed. 1920
Manson, Sir P. .. *Tropical Diseases* (Ed. by P. H. Manson-Bahr) .. .. 7th Ed. 1921
Martindale and W. W. Westcott, W. H. *The Extra Pharmacopœia.* Vol. II. 17th Ed. 1921
Maublanc and Ratié. *The Medical Examination of Airmen* (Trans. by N. Ball) 1920
Mediterranean War Area, Some Medical Diseases in the .. .. (3) 1917
Military Hygiene, Manual of Elementary .. .. (3) 1912
Mosso, A. .. .. *La Peur* .. .. (3) 3me Éd. 1905
„ .. .. *La Fatigue* .. .. (3) 5me Éd. 1905
Paget, S. .. .. *Sir Victor Horsley* .. .. (7) 1919
Parker, G. .. .. *Early History of Surgery in Great Britain* .. 1920
Powell and P. H.-S. Hartley, Sir R. D. *Diseases of the Lungs and Pleuræ* .. .. 6th Ed. 1921
Price-Jones, C. .. *Blood-Pictures* .. .. 2nd Ed. 1920
Ramsbottom, E. M. Brockbank and A. *The Clinical Examination of Lung Diseases* 1921
Ratié, Maublanc and *The Medical Examination of Airmen* (Trans. by N. Ball) 1920
Reuss, A. Ritter von *The Diseases of the Newborn* (Ed. by J. D. Rolleston) 1921
Riviere, C. .. .. *Early Diagnosis of Tubercle* .. .. 3rd Ed. 1921
Rolleston, Sir H. *Lumleian Lectures on Cerebro-Spinal Fever* (5) 1919
Taylor [A. S.] .. *Principles and Practice of Medical Jurisprudence* (Ed. by F. J. Smith) (6) 7th Ed. 1920
Thomson, J. A. .. *Outlines of Zoology* .. .. 7th Ed. 1921
Tunstall, F. J. Warwick and A. C. *First Aid* .. .. 11th Ed. 1920
Turner, A. L. .. *Sir William Turner* .. .. (7) 1919
Warwick and A. C. Tunstall, F. J. *First Aid* .. .. 11th Ed. 1920
Westcott, W. H. Martindale and W. W. *The Extra Pharmacopœia.* Vol. II. 17th Ed. 1921
Wilson, R. M. .. *The Care of Human Machinery* 1921
Wound Infections, Studies in (Med. Res. Council) .. .. .. (4) 1920

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Laryngological Association, Transactions of the		1918
American Laryngological, Rhinological, and Otological Society, Transactions of the		1920
American Ophthalmological Society, Transactions of the	Vol. XVIII.	1920
American Pediatric Society, Transactions of the..	Vol. XXXII.	1920
Edinburgh Obstetrical Transactions	Vol. XL.	1920
Hospitals—St. Bartholomew's Hospital Reports ..	Vol. LIII.	1920
London Dermatological Society, Transactions of		1920
Medical Society's Transactions	Vol. XLIII.	1920
Smithsonian Report for 1918		1920
Studies from the Department of Pathology of the College of Physicians and Surgeons, N.Y.	Vol. XVII.	1920

MEETINGS OF SOCIETIES.

On Wednesday the 12th of January, 1921, the Bristol Medico-Chirurgical Society held a meeting which was devoted to a discussion on **Psychotherapy**. DR. L. E. V. EVERY-CLAYTON was in the Chair.

DR. R. G. GORDON opened the discussion. (Paper published in full on p. 11).

PROFESSOR LLOYD MORGAN pleaded for closer union between academic and clinical psychology, referring to an article recently published by him in favour of the teaching of psychology to medical students. He asked the clinical psychologists to " nail their colours to the mast," and to state to which school of psychology they adhered.

DR. J. R. R. TRIST spoke of the work of a neurological clinic of the Ministry of Pensions, and illustrated the impossibility of separating psychotherapy from other forms of treatment by data regarding the incidence of tuberculosis among neurasthenic ex-service men.

DR. H. H. CARLETON referred all conflict to a struggle between the egotistical instincts on the one hand and the higher, more recently acquired altruistic motives on the other, and alluded to the " herd instinct."

DR. O. H. WOODCOCK confessed himself an adherent of the animistic school of psychology. As a means of preventing psychical disorders he declared his belief in educating the individual to a better understanding of himself and his relations to the cosmic order.

DR. J. R. CHARLES criticised the philosophy on which modern psychotherapy is founded, pointing out that " conflict " is not

merely inevitable but actually necessary as a means of education for the individual and the race. He deprecated the use of hypnosis as a therapeutic measure.

DR. C. F. COOMBS alluded to the disturbances of visceral function that arise from the psycho-neuroses, and also to the part that similar disturbances often play in aggravating the symptoms of organic disease.

DR. E. T. GLENNY attacked the work of the psycho-analysts, particularly on the grounds that it was falling into the hands of practitioners with inadequate experience of organic disease, and that undue insistence on sexual motives was discrediting the profession in the eyes of the public.

MAJOR A. E. LISTER, I.M.S., described the case of an Indian soldier and his recovery from a psycho-neurosis by means of auto-suggestion.

To these comments and criticisms DR. R. G. GORDON replied.

A meeting of the Bristol Medico-Chirurgical Society held on February 9th was devoted to discussion of the subject of **Shortness of Breath,** opened by the President, DR. L. E. V. EVERY-CLAYTON, who gave a brief review of the physiology of respiration, and divided the causes of shortness of breath into inhibitions of respiratory movement, occlusion of air passages, and changes in the composition and circulation of the blood in the lungs. Examples of each group were given, and a number of propositions made by way of furnishing a basis for discussion.

DR. J. R. CHARLES demonstrated and explained Fridericia's apparatus for measuring the carbon dioxide content of the alveolar air. He showed that dyspnœa was caused whenever an increase of the circulating acids, volatile or otherwise, stimulated the respiratory centre to increased effort, and instanced the air-hunger of diabetic coma and of salicylate poisoning, as well as the dyspnœa accompanying muscular effort and provoked by excess of lactic acid. He drew attention to some of the discrepancies to be observed in pulmonary disease, where a small lesion such as an infarct might cause more dyspnœa than was often encountered in much grosser lesions of the lung.

PROFESSOR F. H. EDGEWORTH discriminated between subjective breathlessness and quickened respiration, and instanced " Cheyne-Stokes " breathing as a condition in which the patient had little or no discomfort. In pneumonia, with a respiration rate of 40 per minute, there might be no subjective dyspnœa, but a patient with bronchiolitis breathing at the

same speed would feel very short of breath. He also alluded to hysterical quickness of breathing.

Dr. J. O. Symes mentioned some of the conditions in which it was difficult to explain the dyspnœa present, remarking that in cases of cardiac disease without murmurs it was apt to be a prominent symptom, and that in emphysema of the lungs it was often difficult to determine whether the shortness of breath was due to the emphysema itself or to the myocardial degeneration and the obesity which so often accompanied it. He also spoke of the dyspnœa of hyperthyroidism and of mediastinal tumour.

Dr. C. F. Coombs gave a brief account of the origin of dyspnœa in cardiac disease, speaking particularly of conditions of deficient aëration due to right heart failure, and also summarising recent work on the part played by acidosis in the causation of " cardiac asthma " and allied disorders of respiration. He pointed out that even in the presence of organic disease of the heart the nervous element had to be considered.

Dr. R. G. Gordon said that he was impressed by the part played by the endocrine glands and the autonomic nervous system in the production of dyspnœa, and instanced the effect of emotion and of adrenalin in relieving asthma.

Dr. E. H. E. Stack asked how it was that children with evidence of acidosis might nevertheless be free from dyspnœa.

Dr. Cecil Clarke spoke of the disproportionate dyspnœa of early tuberculosis of the lung, which he thought might be due to the action of bacterial toxins, a proposition which he supported by quoting the fact that pneumococcal infection of tissues other than the lung can quicken the respiration.

Dr. J. A. Nixon described his war experience of gunshot wounds of the chest. He stated that in these the dyspnœa was not solely determined by the extent of lung injured or to the bulk of intrapleural extravasation. Infection of the blood within the pleural cavity quickened respiration. He also quoted examples to show that displacement of the mediastinum directly, and irritation of the pleura reflexly, had great influence on the degree of dyspnœa.

Dr. H. H. Carleton confirmed what was said as to the importance of the pleural reflex from his experiences in the artificial induction of pneumothorax.

Dr. O. H. Woodcock gave a brief account of a case of hysterical dyspnœa due to a psycho-neurosis.

Dr. R. C. Clarke had also noted that infection of the contents of a hæmothorax quickened the respiration.

The President briefly summed up, congratulating the Society on having brought forward so much that was interesting and instructive.

Obituary.

JOHN MATTHEW FORTESCUE-BRICKDALE, M.A., M.D. Oxon., M.R.C.P. Lond.

It is with profound regret that we record the death of our Editorial Secretary, Dr. Fortescue-Brickdale, on June 2nd, at the early age of 51, after an illness whose final stages were unexpectedly short. For although it was clear to his friends that his health had been seriously impaired by severe illness whilst serving in France, it was with almost dramatic suddenness that the disease assumed a new and, as it proved, fatal aspect. Brickdale, who had been educated at Dulwich, Guy's and Oxford, came to Bristol in 1903, after leaving Uppingham, where he had been school doctor. His scientific knowledge and personal charm soon brought him into public affairs. His first medical election here was to the staff of the Children's Hospital: then in fairly rapid succession he was appointed Lecturer in Pharmacology in the University of Oxford, Assistant Physician to the Bristol Royal Infirmary, Director of the Public Health Laboratory in the University of Bristol, Physician to Clifton College, and finally, in 1919, Physician to the Royal Infirmary. There had been an interesting connection between his family and the Royal Infirmary: "In 1766 Matthew Brickdale wrote to the Committee stating that his uncle, John Brickdale, had left £200 to the Infirmary on condition that his great-nephew (the said Matthew) and his heirs should have the 'Power and Privelage of perpetual subscribers.' This condition was agreed to. In 1840 John Fortescue-Brickdale successfully claimed this right as a descendant of Matthew Brickdale. In 1867 Matthew Inglett Fortescue-Brickdale's name was substituted for that of his late father in the list of life trustees."

Dr. Brickdale was the younger son of the last named, and his loyal affection for the old B.R.I. was perhaps a greater asset to the place than the "Power and Privelage" to which he was in some sense the heir. During the war Brickdale served as a captain in the R.A.M.C.(T.), first at the 2nd Southern General Hospital in Bristol and later for about two years in France, where his health became so seriously undermined. On his return to Bristol he was given charge of a

special centre at Southmead, where he studied the later phases of "Chest Wounds," publishing an admirable summary of his observations in the *Quarterly Journal of Medicine* in 1918. Brickdale had wide sympathies and many interests. He was a keen member of the Bristol Medical Book Club, whose antiquity appealed strongly to his tastes. He was a zealous churchman and at the time of his death was Churchwarden at All Saints', Clifton. On occasion he had filled a part in the Medical Dramatic performances, his real talent in this line being somewhat overshadowed by memories of the terrific success which attended his delivery of the simple phrase, " The prisoner refuses to answer."

All his colleagues as well as his many friends will miss sadly his genial wit, his sallies of erudition, and above all his sweet reasonableness. We are indebted to a friend and contemporary of his at Oxford for the following personal tribute to his memory :—

" Jack " Fortescue-Brickdale at Oxford, where I first knew him (we went up to Christ Church in the same term, October, 1888), was a lovable figure. How well I remember going to his rooms, in Meadow Buildings, for the first time. Our talk was of literature and life (little enough we both knew of it then), and it was to him that I owed my introduction to Lamb's inimitable prose. I think I see that afternoon now : Jack bustling about getting tea, after having handed me the *Essays of Elia* and having pointed out some exquisite passage from " Oxford in the Vacation," or some daring witticism in " Distant Correspondents," an essay in which he specially delighted. I can truthfully say that, although I had many friends at the House even in those early days, it was Jack's engaging personality that chiefly attracted me, and my memories of Oxford are so indissolubly wrapped up with him that it is impossible for me to separate him from the Home of Lost Causes. We became inseparable ; by casual acquaintances we were constantly mistaken for each other, much to my advantage in every way, and how greatly I benefited by his dear comradeship it is impossible for me to say.

Jack was one of those men whose minds are so alert, that if one uttered some paradox or gave vent to some ridiculous association of ideas, he would catch it up and carry on the pleasant fiction in the gayest and most delightful way. He was never one to reply monosyllabically to any remark ; he had something of the touchstone in his composition ;

full of wit himself, he was as often the cause of wit in others. How we have sat, with kindred spirits, a hundred times into the early hours of the morning and, to use Henley's phrase, have mapped "the course of man's regeneration over a pipe!" How often have I not returned to my rooms in Canterbury, with the moon lighting up the delicate tracery of Wren's tower, full of the immediate memory of those "noctes." How one regretted that such symposia were not eternal; even the imminent "vac" lost something of its glamour in the greater glamour of that delightful and frequent companionship. In music we had another bond. Jack played the violin better than the average amateur, and his knowledge of the great masters of tone was equal to his acquaintance with the great masters of poetry and prose. The Musical Union under old Johnny Mee, as the Rev. John Mee, D.D., Precentor of Chichester, etc., etc., was familiarly known to us, was then in the hey-day of its success, and Jack was one of those who had a standing invitation to the Sunday meetings at Kettel Hall which the Doctor extended to a few favoured ones. We liked those re-unions, not only because of the concord of sweet sounds and the host's genial welcome, but because it gave us House men a certain *kudos*—we had some twenty minutes (was it ? or was it longer ?) more grace than members of other colleges, and we rather ostentatiously stayed out our welcome, (I trust we did not over-stay it) in order to show, I fear, our superiority, or rather the superiority in sense possessed by those who framed the laws of Christ Church. Jack loved this—and, after all, we were but boys. He left Oxford, as he had entered it, trailing clouds of glory. In the larger world I did not, at first, see so much of him; but he told me, wondering, that he was going in for medicine; and lo! at Guy's he was the most brilliant man of his year. Of course he was. I was in no way surprised. After a short period at Uppingham he settled in Bristol, and I saw still less of him; but whenever we did meet he was always the same dear fellow, amusing and delightful; and when he wrote, his letters still contained the same boyish jokes and banter. Work and worry may have aged him in outward appearance; the war, in which he fought against disease and death as nobly as did any combatant against the other enemies, left its mark upon him, but he died as he had lived a boy at heart :—

> "Seasons impaired not the ray
> Of his buoyant cheerfulness clear."

In spite of all the ills that flesh is heir to, in spite of one of the heaviest blows a man can be called upon to encounter, Jack died young, and he carried to his grave on the hill that looks towards the Cotswolds and the Mendips, where to-morrow's

rising sun will gild his new-made grave, the love of those who knew him best, and who as they stood around his last sleep, could say with his favourite poet :—

"How he lies in his rights of a man,
Death has done all Death can."

Local Medical Notes.

UNIVERSITY OF BRISTOL.—*M.D.:* A. R. Heber, A. D. Symons.

M.B., Ch.B.: W. H. Royal, Marjorie Wadsworth (1st Class Honours).

Final Examination, Part I.: P. Beames, M. Critchley, J. R. Duerden, W. G. Nott, J. A. Pritchard, W. K. A. Richards, V. S. Tryon. (*Including Forensic Medicine and Toxicology*): W. A. Jackman, P. Phillips.

Second Examination (*Elementary Anatomy*): C. F. Killick, A. C. Lysaght, E. May, E. S. Rogers.

Second Examination, Part II.: M. C. Barclay, S. H. Blacker, A. P. Bodman, N. J. Bown, E. G. Bradbeer, G. B. Bush, E. R. Clutterbuck, W. L. Cossham, M. F. Dalton, H. M. Dixon, R. H. Dummett. L. Dunn, F. R. Edbrooke, E. B. Eedle, N. J. England, H. M. Golding, W. A. Gornall, J. L. Griffin, R. C. Hatcher, A. G. Heron, J. A. James, F. G. Jenkins, D. E. Joscelyne, E. F. King, A. H. Marshall, J. R. Nicholson-Lailey, A. S. Prowse, R. A. Sammons, A. E. Sherwell, H. Taylor, R. E. Whitby, C. F. Wilson, G. S. Mundy.

D.P.H., Part II.: F. V. Cant, A. D. Fraser, G. C. Williams.

Diploma in Dental Surgery.—First Examination: S. H. Bedford, J. G. Bishop, W. B. Bowrey, M. P. Browning, A. W. Cawsey, P. O. Dyer, C. H. Hill, H. F. D. Lane, R. Lonnon, E. W. Mogg, R. C. Price, J. F. Rigg, J. S. Roberts, B. F. Robinson, C. F. M. Taylor.

Second Examination: R. March. *Part I.:* J. Evans, H. C. Hopes, K. A. Lewis, E. H. Longley, C. G. Lewis, C. G. Payne, H. W. Pidgeon, G. G. Royal, C. G. Saxon, C. E. Smith, G. A. Thomas, C. R. Woods.

Third Examination (*Dental Anatomy*): R. H. Davies, H. C. Hopes, K. A. Hunt, E. H. Longley, C. G. Payne, H. W. Pidgeon, M. Ritblatt, C. R. Woods.

Final Examination: N. H. Bodenham.

CONJOINT EXAMINING BOARD OF ENGLAND.—*Anatomy and Physiology:* F. H. Woolley, E. Butler, C. F. Powell.

Materia Medica: M. A. Summers.